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EDGE

Sony ■ Sega ■ Nintendo ■ 3DO ■ Amiga ■ PC ■ Atari ■ SNK ■ Arcade ■ NEC ■ CD-i



PS-X

Sony's world-beating gamebox exposed

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Sony's plan for world domination: 500 MIPS, 4,000 simultaneous sprites and 360,000 polygons per second. As the Japanese launch approaches, Edge arrives at the ultimate gameplaying platform







Multimedia is dead… long live the PlayStation

Now that Sony have released shots of their machine, another piece of the PS-X puzzle fits into place. All that is left now is to see the system actually running PS-X software and the myth will become reality.

Anyone who has seen the PS-X doing its thing – **Edge** included – will need no convincing that it is the most powerful games system there has ever been. But it's interesting to note that Sony, who have fingers in almost every field of entertainment and communications, have opted for a dedicated games machine. Perhaps in years to come we'll see the PlayStation evolve into a multimedia station with a multitude of uses and all manner of peripherals.

Conversely, Philips, who do nothing but make electronic consumer goods, opted to create a home multimedia system. And now, several years down the line, they have decided that CD-i is actually an FMV games machine that also plays films.

Philips shouldn't be blamed for pre-empting an information revolution that failed to materialise. But Sony are to be commended for not allowing the multimedia issue to cloud their judgement. With all the power at its disposal, PS-X could quite easily have been touted as an all-purpose home entertainment and productivity workstation. Instead, Sony have given us what we want – a powerful games machine that can play phenomenal games.

The melding of words, sound and pictures on a single machine to facilitate the dissemination of information is an admirable goal. As an educational tool, multimedia will be seen as one of the most important advances of the 20th century.

But it's simply not as much fun as exploring dungeons, jumping on baddies or shooting things…

The **future** is almost here…





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insideview

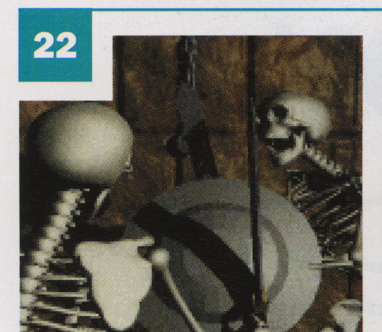
6 News

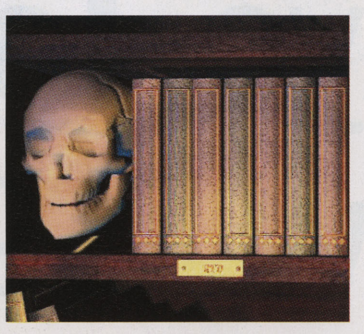
This issue, **Edge** jets off to the world's most exciting videogames exhibition: the Tokyo Toy Show. Here, seven new pieces of hardware, including the Sega Saturn and the Neo-Geo CD, fight for the attention of over 100,000 excited Japanese. Also in the Far East, **Edge** tracks down NEC's 32bit FX, shown in action at the company's Tamauchi headquarters. It's a powerful system, but it faces fierce competition. Finally, Atlanta plays host to the USA's biggest computer show, Comdex: 64bit video adaptors for the PC, 128bit chips and lots of porn on CD-ROM





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Prescreen

Edge bones up on two forthcoming PC games, *King Arthur* (left) and *11th Hour* (right). Nice graphics, but will there be any gameplay?





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Testscreen

Among the games reviewed this month: Nintendo's Super FX-boosted *Wildtrax* (left), and 3DO's new polygon adventure, *Dr Hauzer* (right)



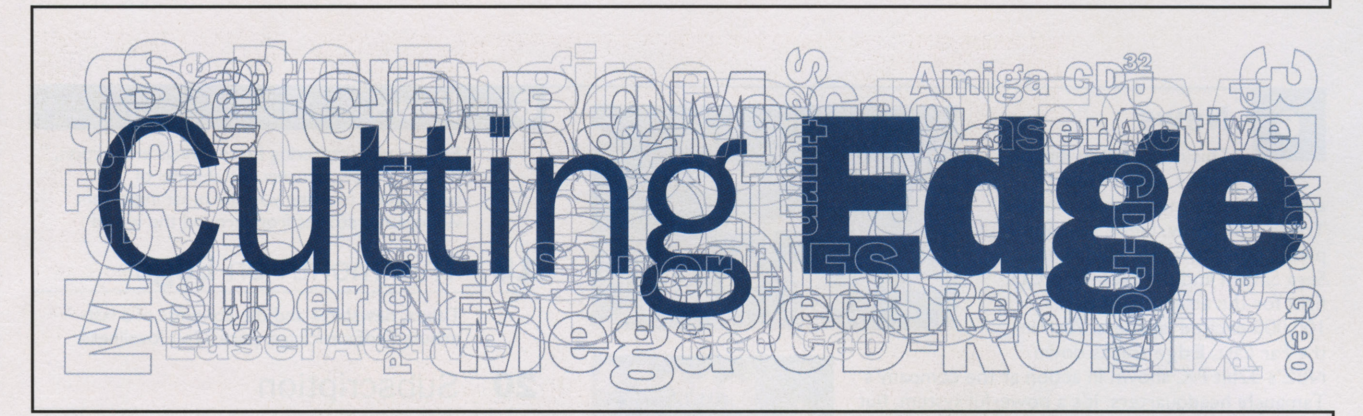
Photography: Jude Edginton

Nick Alexander

This is a man who started his career as a British Rail trainee and went on to become one of the most powerful figures in the videogames industry. Nick Alexander, founder of Virgin Games and onetime Sega UK chief, talks to **Edge**

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Tokyo Toy Show: Sega unwrap remodelled **Saturn, page 8... Saturn** games and first full release schedule, **page 9... Sony PlayStation** debuts, **page 10... SNK** unleash **Neo-Geo CD, page 11... NEC** reveal new **FX** system, **page 13...** Atlanta **Comdex** report, **page 16...**



The very latest **news** from across the entire world of videogaming

The Tokyo **Toy Show**, 1994

The Tokyo Toy Show has always been *the* place to unveil new games hardware. This year, it witnessed the birth of the next generation. Edge just had to be there







Over 100,000 people attended the show, with 154 Japanese companies and 72 foreign companies exhibiting their kit

Sega dominated the show with a massive Saturn and Super 32X village showing all the latest demos

The stampede towards a new level of gameplaying performance began in earnest at this year's Tokyo Toy Show, which took place in early June. Sprawling across the familiar expanses of the giant Makuhari Messe stadium in the Tokyo suburbs, this was the place to go for the lowdown on the new game systems from Sega, Sony and just about every videogames company except Nintendo (they stage their own show later in the year). During the four days of the show, no less than seven new hardware platforms jostled uncomfortably for position.

Leading the pack, as predicted, were Sega. Not only did they push the →

During the four days of the show, no less than seven new hardware platforms jostled uncomfortably for position



A huge Saturn zone was Sega's main pull, but getting near it with anything that you could point and click wasn't easy. Edge's paparazzo was top of the journo hitlist

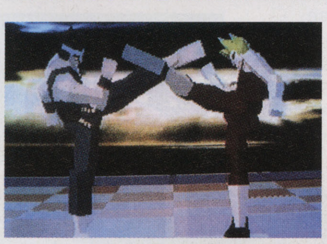
Those expecting a complete version of *Daytona* for Saturn were in for a shock

What is it?

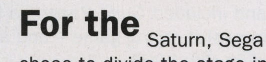
It takes place throughout August this year in all of Future Zone's 83 high-street game stores. It costs 50p to enter (with all the money going to charity), and will culminate on October 29 at a well-known venue in central London

← slightly remodelled Saturn and its software, but the Super 32X add-on for the Mega Drive showed up too, proving that Sega do have plans for a Japanese launch. A paranoid Sega went to such great pains to ensure that journalists wouldn't take pictures of any of the demos on display that they installed a guardian at each screen on most of the Sega stands, ensuring that the only shots that did get snapped were most likely to be of the carpet, overhead light fittings and said officials. Naturally, **Edge** wasn't easily deterred.





Virtua Fighter on Saturn (above and top) was another early game – only 30% complete, in fact



For the Saturn, Sega chose to divide the stage into four separate zones – or 'worlds', as they were flagged. 'Virtua World' contained playable and non-playable demos of *Virtua Fighter*, *Daytona USA*, *Victory Goal* and *Deadlus*, a 3D shoot 'em up. Most attention, especially on the third and fourth days, was devoted to *Virtua Fighter*, despite the fact that the version shown was an incredibly early one, with ill-defined characters and no attacks or fighting moves accessible – only two arm movements (punch and block) and two kicks were available. In fact, this was evidence that Sega are redeveloping the game (see Prescreen, p28 and 29), because it looked nothing like the Sega 'development' videotape demo doing the rounds, and shown briefly at the Las Vegas CES.

Sega's other big name Saturn release was even less advanced. *Daytona USA* was so early that it looked like the demo had been knocked together just for the show. Enthusiastic onlookers huddled around Sega monitors, only to be treated to a Daytona car on a bland, inclined scrolling track. The car did look identical to the one in the arcade version, but there was little else.

No, it was actually the original Saturn software that looked the most complete and impressive. The '3D soccer game' (**Edge** 8) finally received a name – *Victory Goal* – and it looked stunning, replete with texture-mapped turf and players made all the more impressive by 'Virtua' camera angles.

Another theme area was 'Fantasy World'. Here, the oddly named *Panzer Dragoon* (the 'shooting game' seen in **Edge** 6 and 7) showed off the polygon performance of the Saturn admirably, featuring great aerial combat taking place across texture-mapped oceans, with superb flying insect creatures.

But it was the *Clockwork Knight* demo (the 'action game' from **Edge** 7

Continued next page





Clockwork Knight for the Saturn is beautifully designed. The Super 32X kicked out a splitscreen *Virtua Racing Deluxe* (top)

news

The supposedly 'final' design of Sega's 32bit machine was revealed at the show. Cosmetic tweaks make it appear more like a straight gamebox, and a damn good-looking one, too

it is...
The 1994 National Games Championship, featuring the best gamesplayers in Britain battling to reach the final at the Future Entertainment Show at Earls Court. The winner will receive a multimedia PC set-up and a trophy

Continued

and 8) that gets **Edge**'s vote for the most appealing title on Sega's stand. This side-on polygon platform game had spectacularly smooth animation and beautifully designed and rendered characters. If only there had been some variety in the demos...

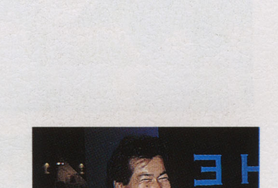
'Dramatic World' was the showcase for the Saturn version of Sega's *Shinsetsu Yumemikan* – a fully rendered 24bit conversion of the *7th Guest*-style Mega CD game, *Dream Mansion*, as well as *Rampo*, a detective adventure based on one of Japan's biggest summer films.

Finally, the snappily titled 'New Standard World' played host to a much sought-after and splendid-looking *Shinobi* update, called, in harmony with the latest Japanese trend, *Shinobi EX*.

Edge has no idea what 'EX' is supposed to mean, but you'll find it after every Japanese rehash that's already had its name blessed with an 'X' or an 'R'. Other games on this stand included *Guile Racer* – a fast, impressive racing game – and a version of *Sim City 2000*.

Despite an impressive presence, Sega had to resort to Trip Hawkins' now legendary sneaky CES tactics, by making sure that all joypad leads went into walls and not into Saturn units. In fact, the only visible Saturn systems were mock-ups encased in glass display cabinets. Sega have restyled the unit since its unveiling only a month or so ago, and it now looks less fussy and rather more like a games machine than Sega's »

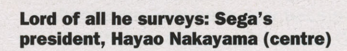
The only Saturns visible were in glass cases (top). The pad has SNES-style buttons (above)



Edge bumped into Sega's coin-op maestro, Yu Suzuki (top) – his *Daytona USA* demo was on Saturn (above)



The Saturn game *Clockwork Knight: Pepperouchau's Adventure* (above and top) was one of the best titles in Sega's 'Fantasy World'



Lord of all he surveys: Sega's president, Hayao Nakayama (centre)





***Panzer Dragoon* (previously known as '3D shooting game') was one of the best Saturn titles. Those polygons really do shift**

***Shinobi EX* for the Saturn was a welcome and impressive homage to an arcade classic. 24bit backgrounds make all the difference**

The 'Virtua Soccer' game finally got a proper name: *Victory Goal.* Needless to say, its scrolling and animation were wonderful

← multimedia stylists would like you to believe. The Saturn joypad, also on display, included the same button arrangement as their six-button Mega Drive pad, but with de rigeur SNES-style top L and R buttons added.

Although Sega's Mega Drive 32 was originally planned for just the US and European markets, its appearance at the show confirmed many people's suspicions that Japan's tiny installed Mega Drive base won't just have the Saturn to play with this Christmas. Four demos were up and running: *Virtua Racing Deluxe, Metal Head, Star Wars* and *Bullet Fighters*; all looked very promising. Again, Sega's bouncers tried their best to ensure journalists wouldn't get too trigger happy.

Virtua Racing was exceptionally slick, a huge improvement over the recent Mega Drive game, but still a long way from arcade perfect. *Metal Head* is an original arcade action game featuring huge robots and stunning texture mapping. *Bullet Fighters* boasts fast 3D graphics and decent blasting action. *Star Wars* – based on the Model 1 game just reaching arcades – looked fast, smooth and very playable.

Overall, Sega had a good show. As well as the announcement of 16 Mega Drive 32 games, they had enough impressive work in progress for Saturn to convince punters that Sony won't have it all their own way in November.

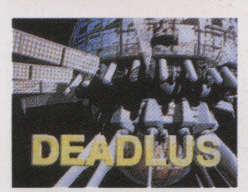
Sony Computer

Entertainment chose not to take a stand at the Toy Show, but displayed their hardware mock-ups for the first

Continued next page







Saturn games on show included *Rampo* (top), based on a new award-winning Japanese film; *New Dream Mansion,* a 24bit version of the Mega CD game; and a 3D sci fi shoot 'em up

Saturn release schedule (90 titles are currently in development)

Action
Sega: *Virtua Fighter, Clockwork Knight: Pepperouchau's Great Adventure, Shinobi EX, Battlemonsters, Dynamic Fantasy*
Thirdparty: fighting game (Capcom), action game (Capcom); *Overdrive* (Zoom); fighting game (Taito), *Suiju Martial Arts* (Data East), *Armoured Troops Race 2* (Nihon Computer Systems), *Keio Karate Squad 2* (Victor Entertainment), *Fist Of The North Star* (Banpresto); 3D action game (Bell)

Sports
Sega: *Victory Goal, The Waves Of Pebble Beach, Greatest 9, Masters, Basketball Saturn, Virtua Tennis, Ice Hockey*
Thirdparty: *Soccer* (EA Victor), *4D Boxing* (Victor Entertainment), *Fire Pro Wrestling* (Human)

Shooting
Sega: *Panzer Dragoon, Deadlus, Doom, Tomcat Alley Saturn*
Thirdparty: *Cotton 2* (Success), *Musashi* (Bell)

Driving:
Sega: *Daytona USA, Guile Racer, Virtua Racing Saturn* (provisional title), *Cyber-race*
Thirdparty: *Virtual GP* (Atlas), *Race Drivin'* (Tengen), *US Drag Champ* (Nihon Bussan), 3D car racing game (Bell)

Simulation
Sega: *Sim City, Ecco The Dolphin Saturn*
Thirdparty: *A.IV* (Artdink), *Derby Stallion Saturn* (Ascii), *War Baddies* (Grams), *Sankokushi TV* (Koei), *Hyper derby* (CRI), *Space Simulation* (Taito), *Super 301 SQ* (Nihon Bussan), *Hard Core* (Virgin Games)

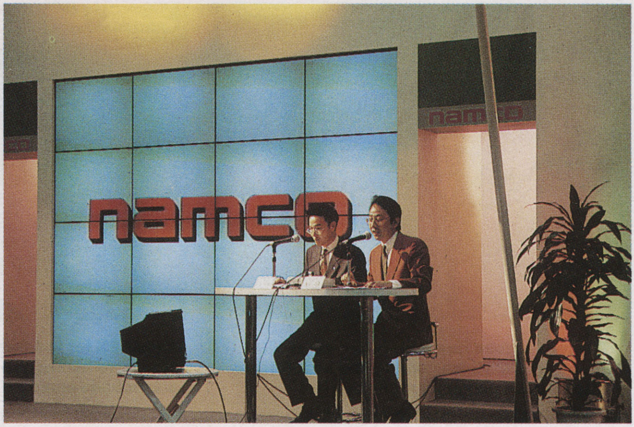
Roleplaying
Sega: *Okushimitama Blue Seed, Magic Night Rare Earth, Fantasy Earth, Rigroad Saga*
Thirdparty: *Bermuda Triangle* (Ask Kodansha)

Adventure/interactive
Sega: *The New Dream Mansion, Chinese Detective, Rampo*
Thirdparty: *Myst* (Sun Electronics), *D-Game* (Media Entertainment), *Fantasy Gallery* (Media Entertainment), *Fantasy Labyrinth* (Media Entertainment)

Others
Sega: *Starcade, Side Pocket, Luxo Casino*
Thirdparty: *Shogi Saturn* (Aski), *Raindrops* (EA Victor), *Shanghai TV* (Sun Electronics), *Mahjong Monkey India* (Chat Noir), *Housing* (Super Software), *Housing Catalog* (Super Software), *VR Mahjong* (Nihon Bussan), *Gandamu* (Bandai), *Ultraman* (Bandai), *The Pinball* (Bell)

Continued





Namco announced their commitment to the Sony PlayStation (above). Sony's kit was exhibited, but on a 'look, don't touch' basis (left)

time, in glass cabinets throughout the show. No working PlayStation software was on display, although many developers, including Konami, Namco and Human, made clear their intentions by distributing two-page brochures for the PlayStation, with their own games (arcade or SFC shots) taking pride of place on the cover. Namco went one step further, laying on an arcade version of *Ridge Racer* as a taste of things to come on the PlayStation, complete with a female company rep twittering about the conversion.

The assault of new hardware just didn't stop at this year's show. As predicted last month, SNK finally got around to displaying some new kit, four years after the introduction of its still remarkably cutting-edge Neo-Geo system. But it wasn't just a restyled Neo-Geo or a CD-ROM add-on; it was Neo-Geo CD, a self-contained CD-ROM drive and Neo-Geo console with the same specification but a whopping seven megabytes (56 Mbits) of DRAM added for those oh-so-huge beat 'em ups.

Anyone who wondered why SNK haven't released a separate CD-ROM drive for all those existing (and desperately poor) Neo owners might be distressed to learn that SNK have re-jigged the Video RAM in this new machine (from 82K to 512K), so one can assume that a CD-ROM add-on for their older system just wasn't technically feasible.

The actual launch of the hardware took place near the show hall in the Prince Hotel, where an audience of information-hungry Japanese games magazine journalists (joined by **Edge**) gathered for the announcements. Lasting around 25 minutes, the presentation was kicked off by an SNK manager loading *Samurai Shodown* and also revealing a built-in editing screen →



Namco's *Ridge Racer* was on view, but only in arcade form. However, the coin-op whetted the appetites of potential 32bit Sony owners

i wish...

Jon Ritman

'**1.** That magazines (**Edge** included) remembered that the biggest sectors of the games market are the Game Boy, SNES and Mega Drive – not CD-based machines (about 1.2%) and certainly not the Saturn, Project Reality or Sony PS-X (0%). We all want to know about the future, but the odd venture into the present would be most welcome.
2. Someone would develop a pill that causes shortterm amnesia so that during the development period I would know what it felt like to play my games as a beginner.
3. The C language was abandoned. Its only use is for porting games from one platform to another, forcing the design of the game to incorporate features that appear on all the platforms, from handheld to super-machine. The game quality almost invariably suffers because of this lowest common denominator.
4. The gaming world realised that firstperson-perspective games (virtual reality, etc) are, almost without exception, boring shoot-the-man/monster/gun-in-front-of-you games. This is not the way forward for the videogames industry.
5. That producers of games based on the latest top films could be put up against the wall and shot.
6. That **Edge** would do a nice big review of *Monster Max*.'

John Ritman, creator of *Head Over Heels*, *Monster Max* and *Matchday I* & *2*, is currently developing a SNES soccer game for release through Domark.



Can't afford Neo-Geo games? Here's the solution – Neo-Geo CD, 300 quid's worth of Neo with a built-in CD-ROM drive and 7Mb of RAM



A local hotel was the location for the unveiling of the new SNK hardware. Three CD games will be available at launch

← for playing conventional music CDs. The Osaka-based company plan to release the hardware on September 9 for ¥49,800 (£310), at which time only three games will be available on CD: *Samurai Shodown*, *Fatal Fury Special* and *Art Of Fighting 2*. However, 24 titles are apparently on their way, all of which will retail at an extremely competitive ¥8000 (£40). In other words, the day of affordable SNK games is at hand.

Perhaps the most surprising hardware announcement at the show came from Bandai, who presented their odd-looking BA-X console for the first time. The specs for this 8-bit CD system look decidedly out of date: 8bit CPU, CD-ROM drive, custom LSI chip for data loading, etc. However, Bandai are targeting it at the younger audience, and will be relying on the enormous pulling power of their TV anime licenses, such as *Dragon Ball Z* – the great-looking *Dragon Ball Z 3* was shown running on the machine. The BA-X will be launched this autumn at ¥29,800 (£185).

NEC had one of the biggest and most impressive stands at the show,

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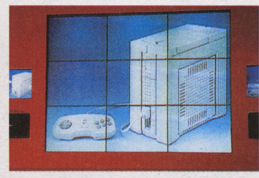
Where is it?

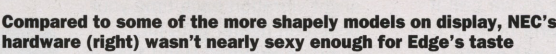
This sun-blessed place is home to an ex-Probe coder who made it big and set up his own software company in the US. Their first homegrown title, *Earthworm Jim*, was featured in Edge 10 and is due out in October



There were numerous attractions at the show competing for Edge's attention. Like NEC's stunning fullscreen, 24bit-colour FX system



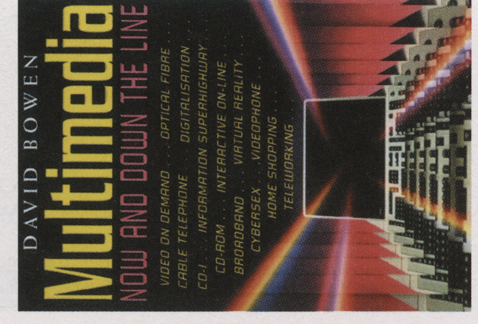




Compared to some of the more shapely models on display, NEC's hardware (right) wasn't nearly sexy enough for Edge's taste

Essential reading

Multimedia: Now And Down The Line



By **David Bowen**
Bowerdean Publishing, £9.95
(ISBN 0 096097 14 2)

If you can squeeze past the disco-prism cover, 'Multimedia...' delivers a smooth cruise down tomorrow's information superhighway. Warning against the idle speculations of tech-head futurologists (no, we won't be getting blow jobs from holograms by Christmas), it seeks to explain what the technical and commercial (cyber)space 3DO, Sony, Sega, etc are slugging it out over actually *is*. It seems apparent that with networks of fibre-optic cabling and interactive on-line access, the gulf between games-dedicated machines and set-top boxes (gateway terminals that will process computer/TV/telephone signals on demand) will, for the time being anyway, grow, not shrink. Which is why the big hardware companies are being so cautious: produce the wrong bit of kit, at the wrong time, for the wrong market, and there are going to be fire engines waiting for you on the tarmac. E



Identity parades to find the real Chun Li and Cammy took place on Capcom's stand every hour

it is...

Laguna Beach, Los Angeles, California, the home of Dave *'Aladdin'* Perry and his Shiny Entertainment team, and a pretty nice place to live, by all accounts. Here, the locals ride the waves (and the babes) morning, noon and night

Continued

and deservedly so. They were showing off two new machines: the Duo-RX and the very promising FX. Sadly, the Duo-RX is just another re-design of the PC Engine Duo R. But it was the 32bit FX people came to see.

Behind the huge stage, two games were shown playing on large video walls – *FX Fighters* and *Battle Heat*. The anime-orientated *Battle Heat* just looked, well, Japanese, but *FX Fighters*, on the other hand, looked very, very nice. Bearing more than a passing resemblance to another one-on-one polygon fighting game, NEC's effort even managed to outshine Sega's benchmark polygon shifter in terms of animation and realism. *FX Fighters* served as a reminder that NEC's FX shouldn't be overlooked when it's released later this year.

As always, Capcom were at the show in force – monitors showing off *Super Street Fighter II* were absolutely everywhere. And as if that wasn't enough, Capcom also displayed a peculiar new *Street Fighter* accessory. Forget dedicated joysticks, this little invention actually allows you to physically experience the hits your character takes during a bout. By strapping the device – it looks a bit like a parachute – on your back, you feel a slight vibration each time your onscreen fighter gets hit. Honda's Hundred Hand Slap is especially painful.



Bandai's new CD-based console, the unusual BA-X, was the focal point of their huge, entertaining stand



realtime
pretend time from your old machine just ain't good enough mate you want propertime or **realtime** as we call it that means time is like real now not made up so if you ask an old 8bit bloke for the time he'll say 'ten past three gov' when really it's time for bed but if you ask a nice 32bit rendered 1500 polygon bloke for the time he'll say 'it's bedtime mate now piss off' but cos he's **realtime** you can control him left and then right and straight under a **realtime** 5000 polygon No51 the cheeky sod...

Over the wire

A regular spot where Edge reports on how technology will shape the news of the not-too-distant future...

From an idea by **Paul Dossis**

...Reuters Newsline, 10:21, March 5, 2000
Via NJ Satlink

The man being treated for 'cybersex addiction' was this morning named as Ryan Stone from Arwell, New Hampshire. It is believed that Mr Stone bough a cybersex suit after using one while vacationing in Germany.

The cybersuit works by transmitting small charges of electricity through various panels positioned on the outfit, which then stimulate the erogenous zones.

Mr Stone is said to have regularly used reality sex videos (RSVs). These explicit video carts are widely available for around 500 ECUs. They are slotted into a home machine connected to the cybersuit, and the user then chooses his preferred environment and whom to have 'sex' with.

CUVRA,the Clean Up Virtual Reality Association, has been trying without success to have RSVs banned. Their spokesman, Angie Dickson, made a statement about the case. 'This case has proved just how harmful these depraved games are,' she claimed. 'We are continuing in our battle to prohibit the sale of these items, and we won't give up until we see new legislation passed.'

Optrec Industries, the manufacturers of the suit, have not yet commented on Mr Stone's condition, but the company's directors are believed to be meeting this afternoon to discuss the issue. Optrec first caused controversy in 1996, when their suits became available in the high street. Many psychiatrists expressed concern about them at the time.

Mr Stone is currently being treated at Dekka's Clinic, Boston, where he'll be staying for the next three months. Doctors will attempt to wean him off the addiction using new psychotherapeutic techniques developed by Dr Warren Goodman, chief consultant at the newly built clinic.

Dr Goodman has his own views on the subject. 'There has been a lot of concern in the media about this matter, and, frankly, I find it worrying that anyone can buy one of these things, regardless of their sexual personality. If used excessively, they could cause serious problems for certain individuals. The cybersuit should only be used occasionally, if at all.'

...transmission ends...

Apologies to **Robert Walkington**, who did not receive a credit for his Over The Wire story in **Edge** 8.

Contributions to **Over The Wire** are welcome. Please send your articles (400 words max) to **Edge**, 30 Monmouth St, Bath BA1 2BW. Get your piece printed and win a year's subscription to **Edge**



FX: NEC's new challenger

NEC's 32bit successor to the PC Engine is a very strange beast. Edge was treated to a hands-on test in Japan

The Japanese are setting the pace in the next-generation-machine race, and now NEC have added another runner to the field. Originally dubbed the Tetsujin (Iron Man) project, the FX system is the computer giant's bid to carve a slice of a fast-growing and competitive market.

Shaped like a small PC tower, the FX is a 32bit CD-ROM machine with the potential to play cutting-edge games. In fact, since last month, when **Edge** spoke to NEC Avenue about the PC Engine Arcade card version of *Strider*, the manager of NEC Avenue (one of NEC's principal software arms), Mr **Usui**, has told **Edge**: 'At the moment we're developing an ambitious shoot 'em up for the FX. This next-generation game uses 3D technology and all of the animation performance of the FX. We're really very excited about the potential of NEC's new machine.'

In late May, shortly before the Tokyo Toy Show, **Edge** visited NEC's Personal Electronic Products Division in Tamauchi, Tokyo, and interviewed **Tetsuya Iguchi** from the company's planning department to glean some information about what this new system is actually capable of.



The FX's design is strange for a games machine – the functional styling makes it look more like a PC tower than a sexy new console



Edge visited NEC's Tamauchi offices, where the FX was revealed for the first time

Edge How many people are now working on the FX project?

Tetsuya Iguchi Around 50 or 60 people are involved – not only engineers but also planning staff

Edge When did development on the FX project start?

TI About four years ago.

Edge When will the FX be released?

TI We'll release it at the end of November in Japan. We don't know when it will be released in America yet. In America, expensive games machines are difficult to sell, so we haven't come to a decision. It will also depend on the exchange rate between the dollar and the yen.

Edge How much will the FX sell for?

TI Less than ¥50,000 (about £300) for the hardware and one pad.

Edge How much will the software cost?

TI We still don't know how much third parties will sell software for. But we hope that it will be roughly the same price as it is now – between ¥5,000 and ¥10,000.

Edge Were NEC the only company involved in developing the FX? Did Hudson have any role in it?

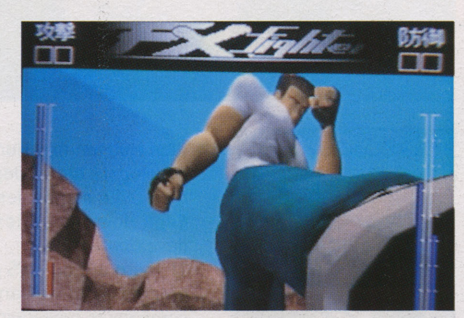
TI We co-operated with Hudson for the manufacture of some components, but the machine will be marketed as an NEC product.

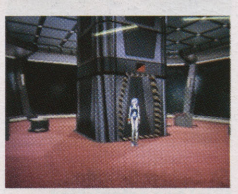
Edge Are Tetsujin and FX completely different projects?

TI No, they are similar, but Tetsujin was the name of the previous project, which has now been superseded by the FX. The FX has a different CPU, and some other details have also changed.

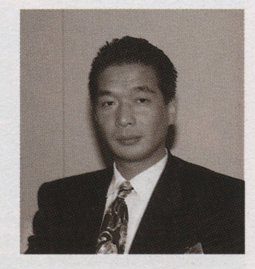
Edge Which thirdparty developers have signed up for the FX project?

TI NEC HE and NEC Avenue, of course,





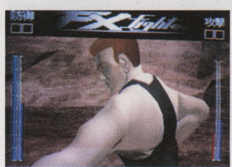
FX Fighter **(top) uses shaded polygons. An adventure game is also planned (above)**



Tetsuya Iguchi, of NEC's Personal Electronic Products (Planning) Division

Continued next page

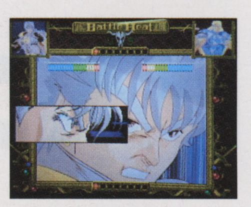




FX Fighter (working title) has astonishing shaded polygons and smooth animation

Continued

plus Hudson and Hunex. The thirdparty developers are all Japanese; there are no foreign companies involved.
Edge How many titles are now in development?
TI There are now 15 games in progress. But we can't say which company is developing these projects – it's not yet official. Most of the new releases will be games, including adventure games and fighting games. *Battle Heat* is planned, as well as a 3D adventure set on a ship. Four or five titles will be available at launch.
Edge What is the FX's main processor?
TI It's a V810 made by NEC, cadenced at 21.5MHz. The CPU doesn't have a formidable capacity, but all the other components of the board (graphics processors, etc,) make the machine is very powerful.
Edge What other processors does the system rely on?
TI There's only one graphics processor, and no animation processor, but there is a sprite processor, and there are also three video display processors.
Edge What's so special about the FX?
TI It's a DMA (direct memory access) machine. Data coming from the CD does not use the CPU bus, which is 32bit. Instead, it goes to the video-out port via a sequencer, an image processor – including a rendering chip – and a video encoding processor. This allows very high-speed animation. This is the big advantage of the FX.
Edge Is the machine MPEG or JPEG?
TI JPEG. In our opinion, JPEG offers a better quality of image for animation.
Edge How many sprites can be displayed simultaneously?
TI A maximum of 128.
Edge Does the FX have a polygon chip?
TI No, unlike other machines, the FX hasn't got a dedicated polygon chip. In machines which have a polygoniser, reduction and enlargement calculations are made automatically, but there is a limit to the calculations. In the FX, because there is no polygoniser, there are no limits to the calculations. The only drawback is the need for data for enlargement and reduction, but it is not a problem for the FX.
Edge Will the FX be compatible with the PC-98 series? [PC-98 is NEC's own PC standard, now the basis for a popular range of computers in Japan.]
TI In fact, it's a kind of cross between the two machines. The FX can actually be used as a CD drive for the PC-98.
Edge When will development tools be available?
TI The first tools were available at the end of last year. The most important tools were only available this month.
Edge What will happen to the PC Engine when the FX arrives?
TI In June a new PC Engine will be released – the Duo RX. We will continue to sell the PC Engine, at a new price of ¥29,800 [£180]. It will not be possible to use PC Engine software on the FX, →





***Battle Heat* – a twoplayer anime-style combat game with varied camera angles**

'We're developing an ambitious shoot 'em up for the FX… we're really very excited about the potential of NEC's new machine'



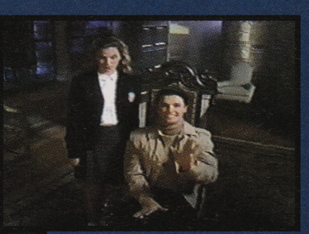
Mr Usui, manager, Multimedia Division, NEC Avenue

Advertainment

Edge's regular tribute to the art of videogame advertising puts 3DO's US TV campaign in the spotlight. Join us after this message…



1 **The scene opens with the portly, tyrannical father stomping his cane aggressively against the ground and bellowing: 'What time will my daughter be home?'**



2 **Cut to daughter with her young man. The man simply twists his hands in reply to the question. Voice-over: 'The passive type. Probably plays Nintendo.' Mario is shown in the background**



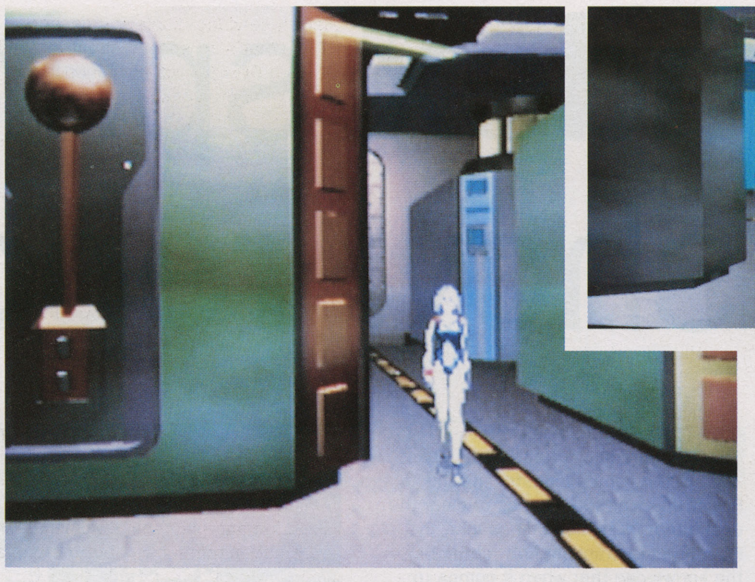
3 **The same scene, but now a different suitor is being grilled. 'Somewhere between ten and two' is the casual reply this time. Voice-over: 'The aggressive type. Probably plays Sega'**



4 **Cut to yet another young man in the hot seat. He is asked the same question. His response: 'What, you mean you want her back?' The daughter smiles; the father is dumbstruck**



Anime-style characters will play a big part in the FX's diet. This adventure features Sailor Moon-style figures



NEC have a number of games in progress for the FX. This one's an adventure set on a spaceship (no title yet), with varied viewpoints and a cast of three nubile anime girls

Who is it?

This man started programming in the late '70s. He went on to produce two of the most inspired blasters ever to grace an arcade: *Defender* and *Robotron*. His games have won the hearts of coin-op fans the world over





The FX can be used to receive and store faxes (including photos), but can't send them

← but we think the sales of both machine will be strong.

Edge How many FXs do NEC expect to sell when it is launched?

TI We plan to sell about 50,000 machines a year.

Edge Which company do you see as your biggest competitor?

TI We think Nintendo, with Project Reality, are our most dangerous rivals, because we do not yet know what kind of machine Project Reality is. However, NEC are not dependent on games; we deal with the whole multimedia market. NEC produce televisions, personal computers, telecommunications systems... We want to create a link between all these different products; we want to make products that can be used at home by all the family. For example, the FX can be used at home to receive faxes.

Edge Who is the FX aimed at?

TI High-school students or older.

Edge What distribution channels will you use for the machine?

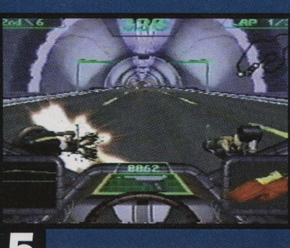
TI We are going to sell it in toy shops. It is still a games machine and will be sold as a games machine, although it is for use as a component of a multimedia environment. The concept of multimedia is sometimes difficult for consumers to understand.

Edge would like to thank NEC for their hospitality.

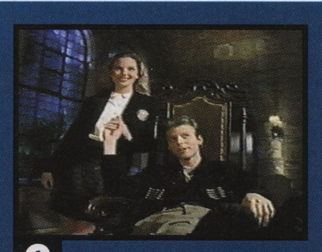


NEC FX tech specs

CPU:	32bit RISC processor V810 (NEC), cadenced at 21.5MHz
Memory:	Main 2Mb; VRAM 1.25Mb; ROM 1Mb; CD buffer 256Kb
Back-up memory:	32K SRAM
Bus:	Full colour/fullscreen; 30fps; full scrolling
Graphics:	16,770,000 colours; 320x240 maximum resolution; maximum sprites 128; Maximum background screens 7, Rotation/enlargement/reduction/transparent/fade/priority
Video colour:	Transparent
Encoder:	Fade, priority
Image processor:	JPEG; horizontal scrolling; background one screen
Processor:	Maximum background screens 6, Rotation/enlargement/reduction
Format:	FX CD/Music CD/CD-G/CD-EG/Photo CD (forecasted)
Pad:	Six buttons



5 The same stentorian voice-over intones: 'The other type. Definitely plays 3DO.' A stream of 3DO game clips follows, accompanied by rock music



6 The domineering father has met his match. Both the girl and the young man are now smiling. Fade to the 3DO logo. Underneath it is the line: 'What are *you* playing with?'

Comdex spring show report

it is...

Programming genius Eugene Jarvis. Eugene made a fortune working for coin-op giant Williams in the early '80s. Even after ten years, Jarvis-produced games like *Defender* have not been bettered

The Comdex show is the biggest hardware event outside Japan, attracting hordes of Mac and PC folk to Atlanta, Georgia every spring. Edge joined the throng, hoping to find something of relevance to the games world



Atlanta, Georgia: not only a future Olympic city but also the venue for Comdex '94

As new consoles vie for supremacy on the periphery of the games industry and the Power PC awaits its chance to clear the desktop of Intel-based dinosaurs, the PC market is standing firm, defiant in the knowledge that when it comes to the crunch, there are more PCs out there than any other machine, and no matter how much we all moan about redundant architecture, it's still got the muscle to stay put.

But in standing firm, the PC market is also standing still, and nowhere else was this more evident than at Comdex. What was billed as the place to view the latest hardware which will push the PC into the future turned out to be a showcase for a handful of interesting add-ons, a glut of pornography CD-ROMs, and little else.

Comdex is big, with eight major halls, a number of subsidiary halls and a series of conference rooms. But the most interesting area for any PC or Macintosh gamesplayer was, without doubt, the two multimedia halls, where the latest in CD-ROM, video and MPEG technology was being shown off.

Probably the most significant new product at the show was the 64bit video adaptor. The video card has always proved an awkward bottleneck for the PC. The situation was improved to some extent with the development of VESA VL-bus motherboards, which finally allowed the video adaptor and the processor to communicate at the same speed, and then the problem was virtually eradicated with the advent of PCI local bus boards, which completely removed the burden of video processing from the CPU. However, until now the video adaptors incorporated in local bus motherboards have still operated at a fixed 32bit data path, both externally and internally. The 64bit adaptor changes all that: the external 32bit path remains, but the video board's



Visitors to the show were assailed from all sides by marketing glitz, but it only served to highlight the dearth of genuine new products

internal processing ability has been bumped up to 64bit.

This enables the potential of more powerful CPUs, like the DX2, DX4 and Pentium, to be realised. A game like *Doom*, for example, runs incredibly fast on a system with a 64bit adaptor, as Diamond, the manufacturers of one such board, proved on a DX2-based PC fitted with their $400 Stealth 64 adaptor (capable of 24bit true-colour images at a resolution of 1024 by 768 and a rate of 55fps on a PCI bus). The possibility of realtime polygon creation with full texture at a reasonable rate in true-colour, even at high resolutions, gives PC games a much-needed new lease of life.

Still on video board technology, the Number Nine PC graphics company revealed the world's first 128bit graphics accelerator chip, the Imagine 128. We could be seeing applications and games that take advantage of this chip in a year or two's time.

Other hardware highlights included Aitech's CTV encoder for both PC and Mac. This gadget takes the VGA or Mac output signal, converts it to RGB in either PAL or NTSC format, and then →

Data stream

Copies of *Striker* for the SNES sold in the UK last year: **80,000**
Commodore's turnover for the last quarter of 1992: **$237.7 million** (a loss of $77.2 million)
Commodore's turnover for the last quarter of 1993: **$70.1 million** (a loss of $8.2 million)
Atari's sales in the first quarter of 1993: **$10.2 million**
Atari's sales in the first quarter of 1994: **$8.16 million**
Electronic Arts' global sales for the year ending March 1993: **$298.4 million**
Electronic Arts' global sales figure for the year ending March 1994: **$418.3 million**
Amount Nintendo spent on TV advertising in the UK in 1993: **£9.7 million**
Amount Sega spent on TV advertising in the UK in 1993: **£11.3 million**
Number of Capcom cartridges for the SNES sold worldwide in 1992: **10.6 million**
Number of Capcom cartridges for the SNES sold worldwide in 1993: **7.8 million**
Percentage of US consumers with a videogame system: **40%**
Money spent by Atari founder Nolan Bushnell to start up the company in 1972: **$250**
Percentage of Atari owned by Time Warner: **27%**
Forecasted sales of Atari's Jaguar in the US last year: **500,000**
Actual sales of Atari's Jaguar in the United States last year: **100,000**
Biggest toy company in the world: **Hasbro, Inc**
Hasbro's stake in Virgin Interactive Entertainment: **16.2%**
Turnover of Virgin Interactive Entertainment for year ending July 1993: **$99.1 million**

← dumps it back to your TV screen. Ideal for playing PC or Macintosh games whose graphical splendour is not best served by a cramped 14inch monitor. The encoder, retailing at $399, also comes with edit functions for sending animations to videotape.

Another gizmo from Aitech, the Audio/Video Blender, enables the PC owner to capture and edit RGB video and 16bit stereo sound from one video source and two audio sources simultaneously. Boasting a 30 frames per second capture capability and colour depth of up to 16 bits, it enables a high-quality signal to be produced for use in multimedia work where rendered graphics and digital video have to be combined.

The PC was dominant at Comdex this year, with the Mac confined to a single Apple stall where a few general applications were being demonstrated. The Power PC, however, was shouting loud and clear in the main business hall, where a 20-foot-high video wall



Comdex is primarily a business event and was dominated by men in suits

was showing the chip's power compared to a Pentium P60. There was no doubt that the Power PC 603 chip was winning every test demonstrated on the video, but Motorola were unlikely to show it losing against Intel's much criticised processor.

However, finding a real Power PC to play around with proved impossible, so it was a case of forget the hardware, find the software. Unfortunately, Comdex is primarily a hardware show, and as there wasn't even a great deal of decent hardware to be found, the chances of discovering jaw-dropping software seemed exceedingly unlikely.

The only people catered for to any significant extent in terms of software were graphic artists. The good news for gamesplayers is that the tools that game artists have at their disposal have certainly improved. Autodesk showed off their latest *3D Studio* add-on, *Texture Universe*, part texture collection for object mapping, part image browser for greater ease in choosing the right texture for your

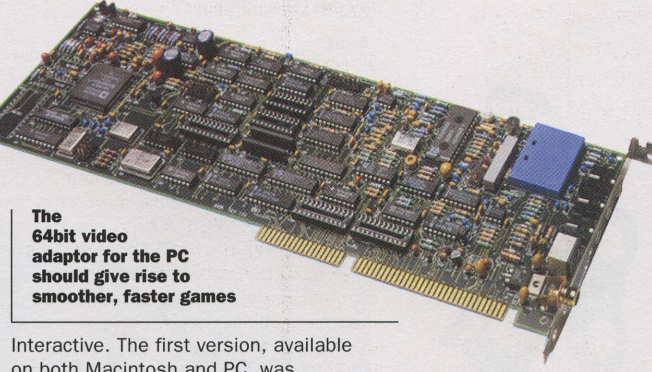


Autodesk's new *3D Studio* add-on, *Texture Universe*, contains over 400 textures, making the bestselling graphics package even more versatile

scene. With over 400 textures on a single CD-ROM, there's plenty for the *3DS* artist to use, especially when combined with the textures included with Release 3 and the *World Creation Toolkit* CD-ROM. *Texture Universe* will be available in the UK in July for £200.

There was also a new contender in the 3D object creation and rendering arena: Caligari's *trueSpace*. Using a *Windows* interface and operating in a 3D visual object manipulation window rather than the traditional three 2D viewports, *trueSpace*'s main advantage over *3DS* and *TOPAS* is its ability to render incredibly quickly: a full scene with four-times anti-aliasing and raytraced reflections could render in under a minute on a powerful system.

And games? Yes, there was one: *Journeyman Project 2*, from Quadra



The 64bit video adaptor for the PC should give rise to smoother, faster games

Interactive. The first version, available on both Macintosh and PC, was incredibly slow, featuring 'interactive movie'-inspired raytraced sections that took aeons to redraw. Although Quadra insist that the update is now three times faster and the game requires just 4Mb of RAM, even improvements like these are unlikely to lift the title above the mediocre. E



This Month on Edge

Late news, late games and the contents of a very, very late package full of game shots

At long last, Acclaim have shown the Mega Drive and SNES versions of their big summer release, *Mortal Kombat II*. Both look stunning. Not only have Acclaim managed to port over the look and feel of the coin-op almost perfectly, but they've managed to cram in all the 'secret' bits as well.

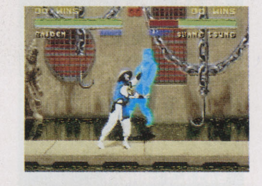
But seeing as both versions will be released on 24Mbit cartridges, this comes as no real surprise. Due out on September 1 – 'Mortal Thursday' – *Mortal Kombat II* is already shaping up to be a big seller.

Saturn came in for a bit of a kicking this month. **Edge** heard that developers had been whingeing about the incomplete development systems and its paltry (!) 90,000 polygons/sec performance. Difficult to be impressed by Saturn when you've been seduced by the PS-X, eh, guys?

A lot can happen in three months. Take Electronic Arts' 3DO games, for example. Three months back, *Road Rash* looked jerky, slow, and very unconvincing. Now it looks fast, smooth and utterly brilliant. The texture-mapped backgrounds really show off the power of the 3DO – especially a superbly detailed mountainous coastline – but there's still some work to be done on the play mechanics – all too often, cars appear from nowhere, making head-on collisions virtually unavoidable.

FIFA Soccer, on the other hand, looked superb three months back. And it looks even better now. It has lost a few frames, making it a tad jerkier, but there's now much more detail. It plays just like the MD game, but EA hope to incorporate even more features before they get the old polishing cloth out.

Nintendo insiders reckon the company's Chicago CES line-up will be



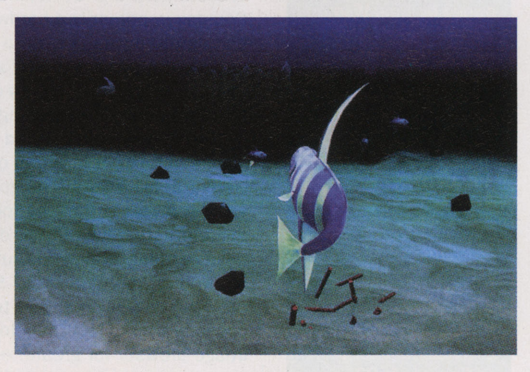
Acclaim's *Mortal Kombat II* on the SNES: a splendidly gutsy conversion

There's some bad news for those planning to get an official PAL 3DO later in the year. An EC import duty of 14% will hit Panasonic's pricing of the 32bit system, making it impossible for them to get it on the streets for under £400 – private imports might undercut the UK price, though

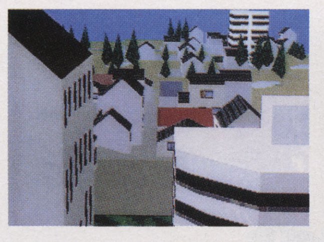
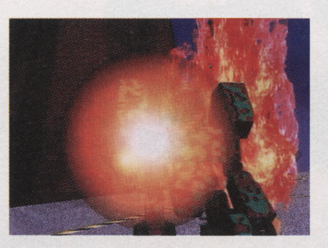




***Clockwork Knight*'s superb Pepperouchau character (left and above) gives some indication of the game's quality**



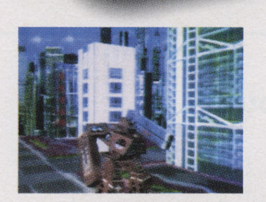
Artdink's *Aquanaut's Adventure* for the Sony PlayStation – a stunning underwater polygon game

PlayStation games are stacking up: Artdink's *A.IV* has a polygon city (left); *Metal Jacket* (right) from Pony Canyon also has great 3D

their best show ever, with two SNES games incorporating new in-cart 24bit graphics processors on display. Both games are shrouded in secrecy, but all will be revealed next month, along with the 24-meg follow-up to *Super Mario World*, *Donkey Kong Country*.

Finally, the Mega Drive 32 has appeared at last, in preparation for an autumn launch. Here's the software line-up: *Doom, Star Wars Arcade, Super Motocross, Virtua Racing Deluxe, Tempo, Bullet Fighters, Super Space Harrier, Stellar Assault, Super Afterburner, Cyber Brawl, Golf Magazine's 36 Great Holes, College Basketball, Metal Head, Fahrenheit CD, Midnight Raiders CD, Surgical Strike CD, Wirehead CD.*



Metal Head **– one of the first MD32 games (above); the new hardware plus MD (top)**

Mega Drive 32 tech specs

CPU:	Two Hitachi 32-bit RISC processors running at 23 MHz/40MIPS
Co-processing:	68000 (MD) and a new VDP
Graphics:	High-speed RISC processors and dual frame buffer allow rendering of 50,000 polygons per second; texture-mapping; hardware scaling and rotation
Colours:	32,768 simultaneous colours
Memory:	4 Mbit RAM in addition to the Mega Drive and Mega CD
Video:	Possible to overlay a plane of graphics over Mega Drive video
Audio:	Stereo, digital audio with programmable sample rates; audio mixing with Mega Drive sound




The stunning transformation of EA's 3DO *Road Rash* (right) is worth checking out. The latest version of 3DO *FIFA* is no slacker, either

Datebook

July

Computer Networking Exhibition Networld Interlop, Tokyo, Japan, Monday July 25–Friday July 29. Call Interlop Europe on **46 39 56 56** or fax them on **46 39 56 99** for further information.
Financial Times Conferences On Multimedia July 12–13. Call **071-814 9770**

September

1994 VR User Show Tuesday September 13–Thursday September 15, Novotel Hotel, London. Last year's best-attended European VR event. This conference is a multistream event and will cover the emerging applications of virtual reality technology in design and medicine. Trade show only. For further details, call Gerry Murray at the VR Centre on **081-995 3632**.

Live '94 – The Consumer Electronics Show September 20-25, Earls Court, London. Not to be confused with the American CES, this is the UK's showcase for all things electronic, backed by the corporate muscle of Rupert Murdoch's News International. Ticket prices: adults (week-day) £4; adults (weekend) £7; accompanied children £3; family (two adults, three children) £16. For further information call **071-782 6893/4/7**.

Business Computing Exhibition Tuesday September 27–Friday September 30, Olympia, London. For more details, call Montgomery Exhibitions Co Ltd, who are based in Richmond, Surrey, on **081-948 9800**, or fax them on **081-940-2171**.

October

Information Systems Exhibition, Tuesday October 18–Thursday October 20, Earls Court, London. For more information, call the show organisers, Blenheim Group plc, on **081-742 2828**.
Acorn World Computer Show Friday October 28–Sunday October 30, Wembley Exhibition Centre. Call Acorn Computers Ltd for further details, on **0223 254254**.
The Future Entertainment Show October 26–30, Earls Court 2, London. All the latest in computing and interactive entertainment plus the final of the National Gameplayer Championship. Tel 0369 4235 – tickets booked before July 31 will be entered into a £100 prize draw.

Show organisers: if your show isn't listed here, it's only because you haven't told **Edge** about it. Do so on 0225 442244, or fax us on 0225 446019, or send details to **Datebook, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW**

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Demon's Crest Super Famicom **11th Hour** PC **Virtua Fighter** Sega Saturn
King Arthur PC **Wing Commander 3** PC **Super Street Fighter II** Super NES

Prescreen

It may simply be coincidence, but four of the six games featured in this month's Prescreen section are sequels.

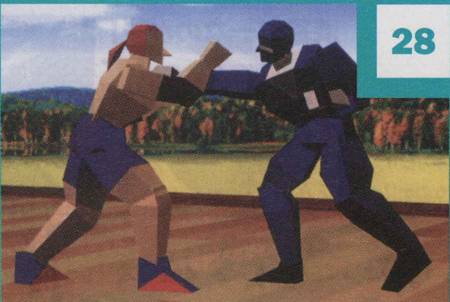
But originality is not a prerequisite for a playable game, as Capcom prove with their latest – and some say greatest – addition to the *SFII* series, *Super Street Fighter II* for the SFC.

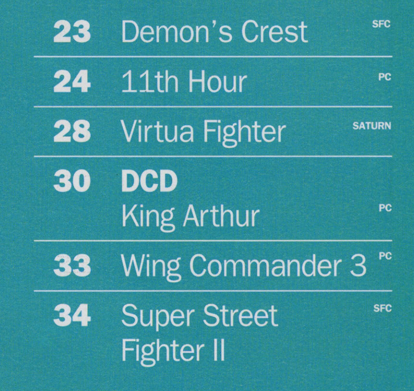
Origin are attempting to push the interactive movie genre a stage further with *Wing Commander 3*, featuring movie sequences filmed in Hollywood with, for once, fairly famous actors.

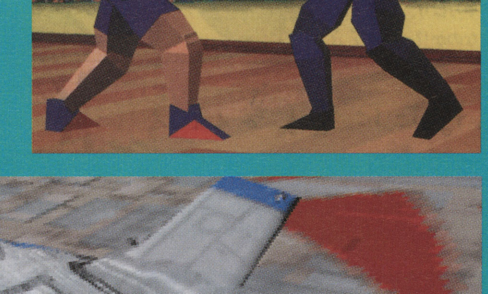
Trilobyte also jump on the sequel bandwagon. *11th Hour*, their follow-up to the hugely successful *7th Guest*, may actually manage to provide the gameplay that *7th Guest* so conspicuously failed to deliver.

Edge also looks at *Virtua Fighter* for the Saturn. If it lives up to expectations, this game could make the *Street Fighter II* craze look like a Val Doonican fan club meeting.


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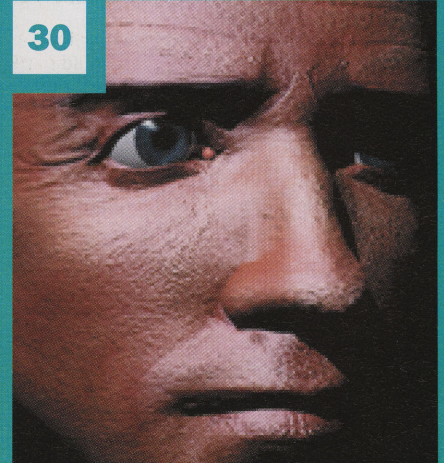

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Demon's Crest

Capcom have an impressive track record on the SNES. **Edge** looks at another game to be added to their stable of thoroughbreds

Format:	**SNES**
Publisher:	**Capcom**
Developer:	**In-house**
Release date:	**October**
Size:	**16 Mbits+BB**
Origin:	**Japan**

History, as they say, has a habit of repeating itself. A little under three years ago, Capcom released two groundbreaking games for the Super Famicom. One – *Street Fighter II* – went on to achieve wide recognition as the best beat 'em up ever made, while the other – *Super Ghouls 'n' Ghosts* – became a cult hit.

This year, Capcom are about to unleash the third *Street Fighter II* game for the Super Famicom, and another *Ghouls 'n' Ghosts*-inspired platform game, *Demon's Crest*. Based on the excellent *Gargoyle's Quest* for the Game Boy, *Demon's Crest* could mark a return to form for Capcom – even at this early stage, the game looks like an absolute jewel.

You play a winged demon called Firebrand – the same winged demon who steals the girl at the beginning of *Ghosts 'n' Goblins*, incidentally – and have to jump, fly, and fight your way through seven multidirectional scrolling levels (plus sub-stages) searching for jewels. Unlike the Game Boy game, there are no RPG sections, but this time Firebrand can morph into different, more powerful forms.

This may sound remarkably similar to countless other platform games, but it's actually a return to the old-style coin-op school of platformers. For a start, it boasts some brilliant play mechanics straight from then Game Boy game: you can walk, cling onto ledges, jump and even hover for a few seconds to negotiate tight gaps. And there are two improvements over *Super Ghouls 'n' Ghosts:* first, there's no slowdown, and even better, there's battery back-up to alleviate that painful back-to-the-beginning feeling.

The game also sports some stunning backdrops and very colourful sprites. Of course, the obligatory bosses put in an appearance as well, and some of them are absolutely enormous, taking up almost three quarters of the screen.

If Capcom can make the whole thing gel together (and the chances of that happening, given the company's pedigree, must be high), and provide a decent challenge even with the battery back-up, *Demon's Crest* looks like joining games like *Wildtrax* and *Super SFII* among this year's best SNES releases. After a lean period, things certainly seem to be looking up for SNES software.





Take to the air to kill this demon (top). Things are heating up (middle and bottom)

Huge bosses are the norm in *Demon's Crest* (above). Your character can cling to the scenery with ease (right)

***Demon's Crest* looks like joining games like *Wildtrax* and *Super Street Fighter II* among this year's best SNES releases**

11th Hour

11th Hour is Trilobyte's follow-up to the hugely successful *7th Guest*. **Edge** crossed the Atlantic to see the game and quiz its creators

Format:	**PC CD-ROM**
Publisher:	**Virgin**
Developer:	**Trilobyte**
Release date:	**October 1994**
Size:	**2 CDs**
Origin:	**US**

Every new system needs a solid game to launch it. On the Mega CD it was *ThunderHawk*. On the 3DO it was *John Madden NFL*. On the Jaguar it was *Tempest 2000*. And the game that put multimedia PCs on the map was Trilobyte's *7th Guest*, which has just clocked up its one millionth sale – despite being two years old now. That kind of success meant that a sequel was inevitable.

Graham Devine, president of Oregon-based Trilobyte, actually wanted to knock up a 'quick and dirty' follow-up. But when the team started coding the game, they found that they couldn't resist embellishing it. As a result, the project has gone through several transformations since it was initiated. In the same time Trilobyte has grown from a company consisting of just four people into an employer of 25 specialist staff – among them artists, professional scriptwriters, programmers and a movie director.

11th Hour is set in the same spooky mansion as *7th Guest*. Robin, the

'Most of the story relies on surprise and intrigue rather than straight violence, but it's not something you'd want a six-year-old to see'

James Yokota, producer



The *11th Hour* mansion has been designed with four secret tunnels. This one (which scrolls incredibly smoothly) leads down from the attic to a hidden room in the cellar

Go up the other staircase at the back of the house and you come across a swarm of bats which swoop down on you



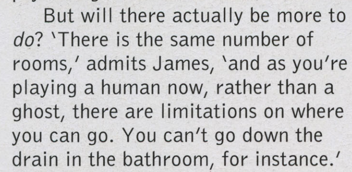


Trilobyte aren't worried about media reaction to scenes like this (above and top right). They say they're making games for grown-ups, not 12-year-olds

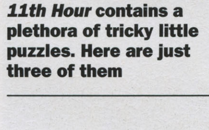
producer of your TV series, has succumbed to the mansion's mysterious lure and disappeared. The object of the game is to rescue her by beating all of the evil house's puzzles.

The main criticism directed at *7th Guest* was that it was too linear; producer **James Yokota** was anxious to avoid similar accusations being levelled at *11th Hour*. 'It's going to be more interactive than its predecessor,' he claims. 'Its storyline will be more sophisticated, too, focusing on moral dilemmas as opposed to just psychological terror.'





But will there actually be more to *do*? 'There is the same number of rooms,' admits James, 'and as you're playing a human now, rather than a ghost, there are limitations on where you can go. You can't go down the drain in the bathroom, for instance.'



***11th Hour* contains a plethora of tricky little puzzles. Here are just three of them**

But James believes that the game environment offers the player plenty of freedom: 'There are four secret passages, plus over 40 treasure hunts built in, and that's part of making the game more interactive. Everything in the house can be grabbed as a solution to a treasure hunt. If you grab the wrong item you get taunted; if you get the right one you see an animation and a portion of drama which gives you a clue to the events which led up to the point when Robin disappeared.'



Much of *11th Hour* revolves around the full-motion video portions of the game. But although Trilobyte have used the FMV in *11th Hour* as a means of creating atmosphere, it's also (unlike in many other CD games) an essential part of the gameplay – you won't make any progress unless you pay close attention to the various dramas that are played out as you search for Robin.





This skull (middle) morphs its way out of the hat. Make the wrong move and you're likely to come to a sticky end (bottom)

There's so much FMV here – 65 minutes' worth – that the data wouldn't fit onto a single CD and the game has had to be released on two discs. But without specialist software written by Graham Devine, even that wouldn't have been possible. Trilobyte's FMV is achieved without any additional hardware, using a proprietary system created by Graham using the Wavelet base technology.

Continued next page





Trilobyte's HQ in Medford, Oregon (top). The ***11th Hour*** mansion is based on a real house (above) – Graham Devine planned to digitise the rooms as well as the exterior, but couldn't get hold of a 360-degree camera

While MPEG uses floating-point maths, which is processor intensive, Wavelet is integer based and therefore runs more efficiently. It also allows programmers to use a 640x320 resolution at 30 frames per second, fullscreen, with little or no artifacting, thus avoiding the need for an MPEG DSP board.

The graphics team, led by veteran artist **Robert Stein**, used *3D Studio*, *Aldus PhotoStyler*, *Autodesk Animator Pro* and *Fractal Painter* to create the rendered graphics and the morphing scenes. On their next project they'll be employing SGI hardware and will shoot scenes on film instead of video, which will enable them to produce crisp images with no irritating blue lines around the actors.

Many of the rendered images in *11th Hour* show the team's commitment to realistic, adult-orientated games. 'There are some fairly violent aspects to it,' admits James. 'We try to make these funny while retaining the impact, but they're not as bad as something you'd see in a film like Akira. The story relies on surprise and intrigue rather than straight violence. However, it's not something you'd want a six-year-old to see. *7th Guest* had a 15 rating and *11th Hour* will merit at least that.'

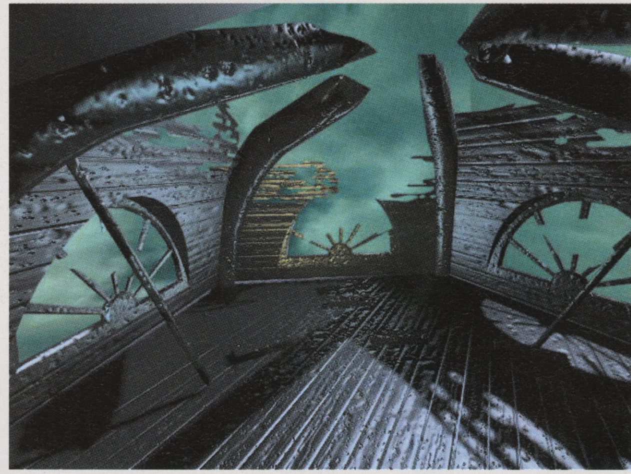
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While visiting Trilobyte, **Edge** is told that representatives of Paramount are on their way for a meeting. Does this mean that there could be some sort of tie-up with a major studio? Robert Stein is not enthusiastic: 'Disney and Paramount are talking to us, and all the major agencies are calling us. The studios want access to this industry because of the overwhelming success of *7th Guest*. I don't know how interested we are in the movie business, though. The problem is that everyone starts talking about getting 'name' actors in.'

But surely having Sharon Stone or Tom Cruise in a game would make it infinitely more marketable? Apparently not: 'Our percentage profits are much higher than you could ever expect to make on a movie,' explains Robert. 'Hollywood simply can't do something for $1.5 million – especially if your actor's fees are $12 million. I see no need for name actors. Would *7th Guest* have sold more with name actors? I don't think so.' But Robert is also resigned to the fact that

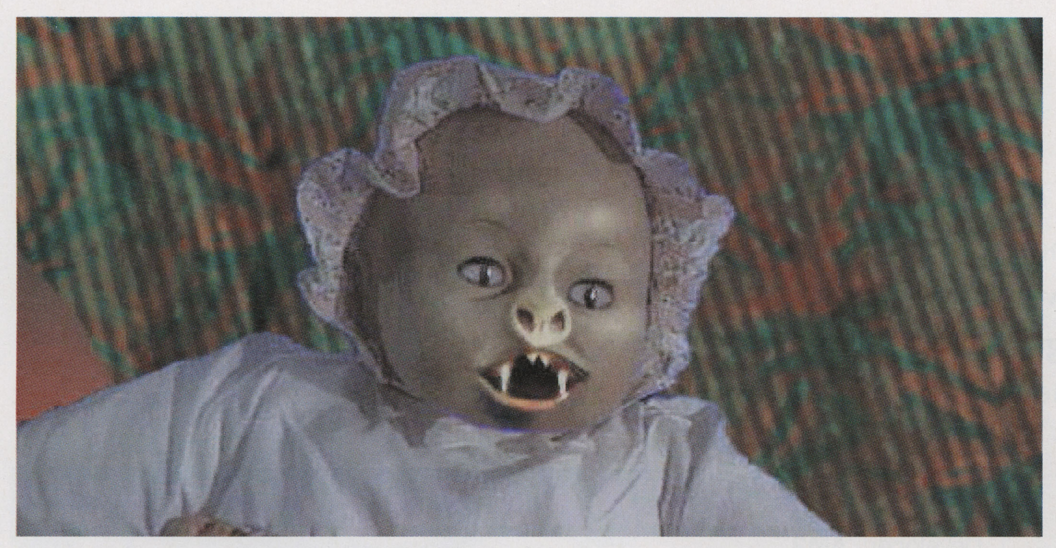
'We didn't aim *11th Guest* at the obsessive gamesplayers. We aimed it at a mass audience and they loved it'

Graham Devine, lead programmer

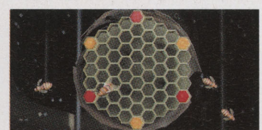




The attic (top) looks even better when animated. This is the bathroom (above), where you'll find two puzzles, as well as one of the previous occupants of the house. Robert Stein, head honcho in the design department, used Autodesk's *3D Studio* to render these scenes







Few things in *11th Hour* are what they seem. In this clever morphing sequence (above), an innocuous-looking doll develops fangs and turns into a right little monster

Hollywood's influence on the videogames industry will continue to grow: 'Inevitably it will happen and this will become just as high risk an industry as the film world.'

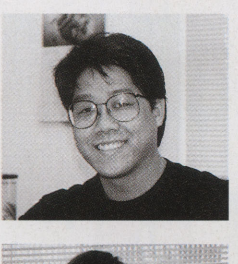


Another trio of puzzles: the object of the chess one (above) is to swap the positions of the white and black bishops – not as easy as it sounds

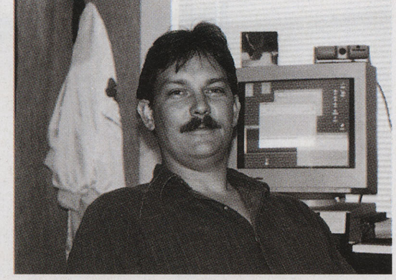
Trilobyte have

decided to ignore the new-generation consoles and concentrate on the machine they know best while they wait for the dust to settle in the format wars. 'We'll be developing primarily for PC over the next few years,' says co-director **Rob Landeros**. 'When 3DO first started it sounded so stimulating, because Trip Hawkins had a great approach which was refreshing after struggling with companies like Sega and Nintendo. The open technology and modest licence were really interesting, the machinery looked good and we plumped for it, but unfortunately it got lost in the wash of platforms that everybody else started touting. It looks as though there will always be five or six competing platforms out there, with one dominant one but nothing taking the lion's share. These people may be lucky to be splitting 20% of the market.'

Graham Devine rules out the possibility of a third game in the *7th Guest* series. He also has a message for the original game's critics: 'Don't buy *11th Hour*. We didn't aim *7th Guest* at the obsessive gamesplayers – we don't make games for that small and largely sad section of the market. We aimed it at a mass audience and they loved it.' E







Trilobyte trio: Graham Devine, founder and director of Trilobyte and lead programmer on *11th Hour* (above right); James Yokota, the game's producer (top left); and Robert Stein, lead artist, (above left)

Credits

Producer: James Yokota
Lead programmer: Graham Devine
Lead artist: Robert Stein
Video director: David Cresswell
Music: The Fat Man
Script: Matt Costello
Script/Design: Rob Landeros

Virtua Fighter

It's the most technically advanced fighting game ever, and it's on its way to the Saturn. **Edge** wonders if Sega's new machine can match the coin-op

Format:	**Saturn**
Publisher:	**Sega**
Developer:	**AM2**
Release date:	**November '94**
Size:	**1 CD**
Origin:	**Japan**



***Virtua Fighter* is only 30% complete, as these development characters and backdrops show; the polygon count will rise considerably**

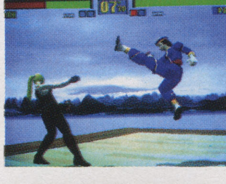
First, a spot of irony. When *Street Fighter II* appeared in arcades in early 1991, some games magazines dismissed it with the same kind of cynical jeering that Stock, Aitken and Waterman enjoyed whenever one of their production-line releases was reviewed by the specialist music press. '*Street Fighter II* is dull, dull, dull,' spouted one hapless journo.

Indeed, *Street Fighter II*'s playability took time to surface, but once its qualities became obvious, the game snowballed into a craze of gargantuan proportions. And many would say the same thing is now happening with *Virtua Fighter*, albeit on a smaller scale. In recent months, Japanese coin-op fans have gone crazy over the game, and what was initially snubbed by many as being clumsy and shallow is showing that it also contains its fair share of hidden depth.



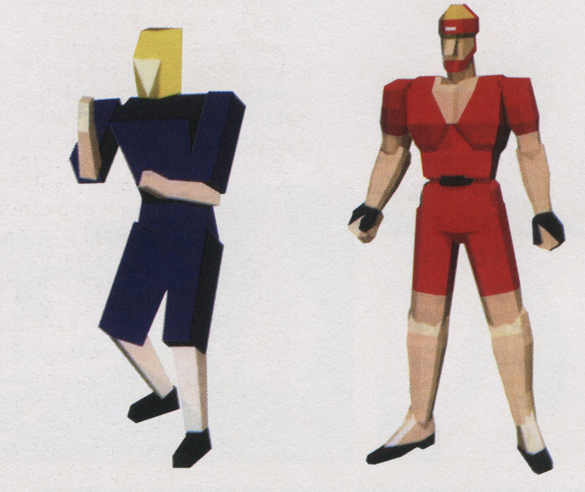
The research and development team responsible for the arcade version of *Virtua Fighter* was AM2, and the legendary Sega division is also handling the translation of the game to the Saturn and Mega Drive 32. At the moment, the Saturn version shown here is only 30% complete – the crude and blocky fighters are simply preliminary designs produced by a high-resolution development tool which lets Sega concentrate on replicating the animation of the characters before moving onto increasing the polygon count.

As revealed in **Edge** 9, Saturn *Virtua Fighter* (bizarrely, in Europe the game's title features an 's' on the end) will use less polygons than its





Yu Suzuki (above) is heading AM2's effort to translate the arcade game (top) to Saturn



The genesis of a fighter, AM2-style: first, start with around 100 polygons (left); then add 500 polygons for much greater detail (right)



Don't be put off by the quality of these initial development screens – the image above has been set up to show the game at only 10% completion



Like the demo game at the Tokyo Toy Show, the character modelling shown here is still at an early stage

'Even with a reduced number of polygons, the Saturn technology is capable of applying textures to individual polygon surfaces'

Yu Suzuki, manager, AM2

arcade parent. While the Model 1 arcade board is quite happy throwing around 180,000 a second, the Saturn hardware will only manage around 90,000-100,000. However, as AM2 manager **Hiroshi 'Yu' Suzuki** points out, 'Even with a reduced number of polygons, the Saturn technology is capable of applying textures to individual polygon surfaces. This should mean the home version won't look inferior to the arcade version.' So, although you'd be hard pushed to believe it from these early shots, Sega are obviously convinced that their 32bit hardware is more than adequate for the job.

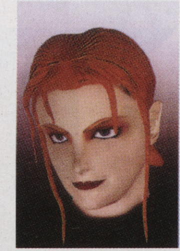
More importantly, Yu Suzuki is also confident that his team will be able to accurately translate the coin-op's 700 different movements: 'We can do it, and we've just discovered a trick to replicate the movements 100%. Movement is everything in *Virtua Fighter*, and we're redeveloping the game from scratch for the Saturn, so it won't be a case of adding just a few simple gimmicks – these wouldn't last and they would quickly become boring. Also, it's quite possible that we'll add some new features from release two of the coin-op [expected in late summer], as well as some things that were cut from the original game.'



A 2,000-polygon Akira (left). Adding an extra 200 polygons makes a real difference (right)

Some of the AM2 programmers and designers who worked on the arcade version are now heavily involved with the conversion to Saturn. 'As the popularity of the arcade version gets greater and greater,'





These experimental rendered versions of Akira and Sara by AM2 could be the first step towards *Virtua Fighter 2*

explains project leader **Keishi Okayasu**, 'there's a lot more pressure to get things right, and we're doing our best to meet the demands of *Virtua Fighter* fans all over the country. The development team are working flat out without any days off!'

A potential killer-app for the Saturn? All will become clearer as the November launch approaches. Until then, check out this month's report from the Tokyo Toy Show (page 6) for more information about Sega's new system.

Dimension Creative Designs

DCD talk to **Edge** about their new, fully rendered CD game, *King Arthur*, which is destined to debunk a few myths

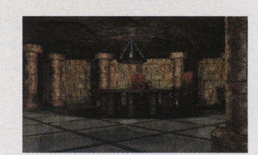
Name:	**King Arthur: The Quest Of The Fair Unknown**
Format:	**PC CD-ROM**
Publisher:	**DCD**
Developer:	**In-house**
Release date:	**Nov/Dec**
Size:	**I CD**
Origin:	**UK**

Hollywood has got a lot to answer for. When Tinseltown gets in on the act, sad stories become upbeat, fairy tales get the Disney treatment and folk stories get three coats of white gloss. The Arthurian legend in particular has attracted more than its fair share of movie glitz.

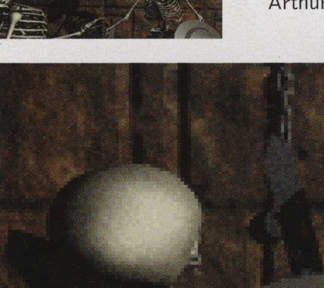
DCD's brand-new CD-ROM game aims to set the record straight about Arthur. The team who brought you *Legends Of Valor* have done their homework and reckon that the real Arthur bore little resemblance to the saint-like hero of film and TV. As far as DCD are concerned, he was a chronic ditherer who watched his empire crumble around him. And Merlin, instead of a bumbling conjuror in a pointy hat, was really a 'womanising, beer-swilling rugby player,' according to **Kev Bulmer**, the owner of Dimension Creative Designs.

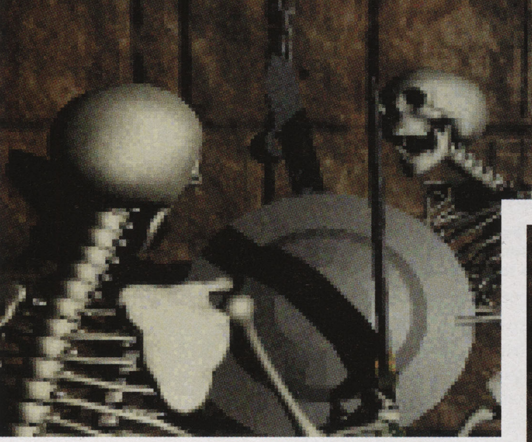
DCD reckon that *King Arthur* will have plenty of plot twists to retain the player's interest. You play the 'Fair Unknown' of the title, and at the beginning of the game you're sent on a quest to a Welsh castle to rescue a queen who has been turned into a serpent by an evil sorcerer. Once you reach the castle, you have to fight various creatures, including a serpent, a pair of sorcerers and a few of the undead. Then, your mission completed, you return to Camelot, where the real meat of the game begins.

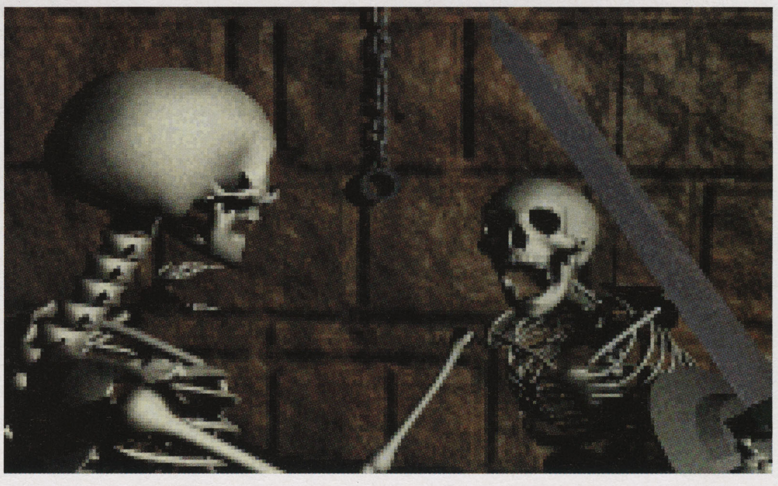
The game is played from a thirdperson viewpoint, and you click around the screen to move your character. The *Alone In The Dark* system of switching viewpoints is used,



When you first enter Camelot, the 'camera' pans around from the doorway to reveal the legendary Round Table







Rather than being drawn in realtime, battle scenes (above and right) depend on pre-rendered frames. When the player selects a move, the relevant sequence of frames is displayed



Considering Merlin knocked up Camelot overnight, he made a pretty good job of the stonework. (The other castles look decidedly run down, though)

which gives it a very cinematic feel, enhanced by close-ups of the faces of Merlin and Morgan Le Fey. But unlike *AITD*, the combat sequences rely on pre-rendered frames of animation held in RAM and displayed according to the move you select.

The game is being created for CD-based systems using PCs and Amigas, in concert with DCD's proprietary graphics engine. 'We're using the *Imagine* rendering system for a lot of the stuff,' explains Kev. 'I'm sick and tired of seeing *3D Studio* stuff, which stands out a mile, because it's not a true raytracer. We're not too impressed with the more expensive set-ups, either – a lot of people think they can stick any monkey down in front of a Silicon Graphics machine and get good stuff from it.'

'A lot of people think they can stick any monkey down in front of a Silicon Graphics machine and get good stuff from it'

Kev Bulmer, DCD

The team are actually using a wide variety of procedures to produce the game. 'We'll be pulling together lots of different techniques,' says Kev, 'including full-motion video, stop-motion animation, model making, make-up, rendering, paint, and hand animating. What we're trying to do is get closer to the look of a film, but this is *not* an interactive movie; it's an adventure game.'

The shimmering water effects in *King Arthur* are particularly impressive – and there's not a Silicon Graphics workstation in sight

With *King Arthur*, DCD are trying to bring something new to the adventure game format. Kev feels that the CD enables programmers to add considerably to what was a very tired genre. DCD's extensive use of FMV has forced them to take a cinematic approach to programming, and their team includes specialists in the fields of lighting, sound and cinematography. Their intention is to create a game which gives the impression that you're actually immersed in the story, rather than just a bystander.

Credits

Design: Kev Bulmer
Programmer: John Wildsmith
Graphics: Nigel Bunegar
Graphics: Matt Stott
Music: Ben Dagleish

Wing Commander 3

The third act of Origin's PC magnum opus finds the Kilrathi forces on the verge of victory. **Edge** is on the scene

Mark Hamill and John Rhys-Davies (he of Indiana Jones fame) wonder how they're going to sort out the latest Kilrathi menace

Format:	**PC**
Publisher:	**EA**
Developer:	**Origin**
Release date:	**November '94**
Size:	**2 CDs**
Origin:	**US**

Somehow, the name Origin and the release date November 1994. just don't seem to go together. Judging by *Strike Commander*'s two-years-overdue standards, we can expect to see *Wing Commander 3* (subtitled *The Heart Of The Tiger*) at the end of 1996, right?

Wrong. Or at least that's what Chris Roberts, the creator of the *Commander* games, would have us believe. He claims *WC3* will be different because, firstly, it's the first project he hasn't done any programming on (the SVGA 3D engine is already finished), and secondly, there won't be the usual wait for the artists to draw all the static graphics, because three hours of cinematic plot-development segments are being filmed in Hollywood (90 minutes of which will be squeezed on to two compact discs using Origin's proprietary video compression system).



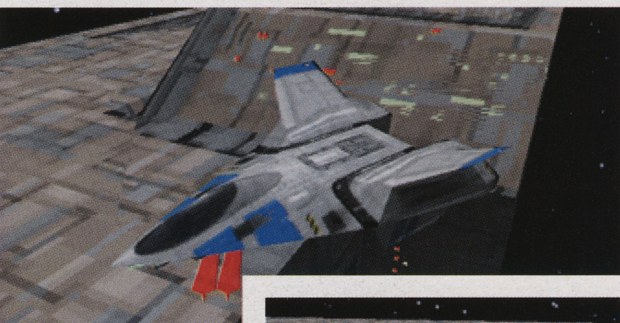
***WC3* is the last part of the Terran-Kilrathi war saga. At the start, the Concordia is wrecked and things are going badly for the good guys**

For once, here's a game that really can claim to be an interactive movie. Starring Mark 'Luke Skywalker' Hamill, Malcolm 'A Clockwork Orange' McDowell and Ginger 'I'm not doing porn movies any more' Lynn Allen, *WC3* gives you the chance to influence what happens both in firstperson-perspective deep-space combat and on board the TCS Victory (your new base ship, following the demise of the Concordia from *WC2*). At various stages during the SVGA FMV plot sequences, you can tell Hamill (who plays the hero, Blair) how to treat his companions on ship, and that affects how they fly when they're on your wing out in space.

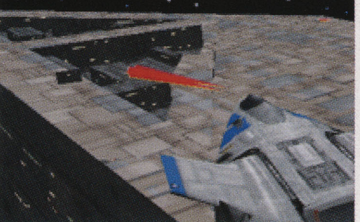
The in-flight sequences are looking gorgeous – although you'll need a Pentium- or DX4-based PC to get the SVGA combat up to speed. But even in VGA, the game still looks better than anything the PC has ever seen, so 486DX owners should be able to get a slice of the action too.

The in-flight sequences are looking gorgeous... even in VGA, the game still looks better than anything the PC has ever seen





Origin claim that *WC3* runs at 24fps in SVGA on a Pentium when flying against a starry backdrop (top)...

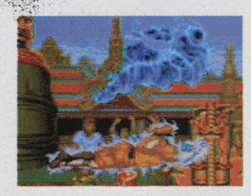


... Dropping to 15fps when flying over the huge capital ships (above and left)


DARE YOU
WAIT UNTIL
THE 11TH
HOUR?

Super Street Fighter II

Fresh from its arcade success, the latest game in the long-running beat 'em up series hits the SNES







From top: Ryu beats up his alter ego; Vega burns his opponent; Ken shows off his flaming dragon punch; the Hong Kong round

Format:	**SNES**
Publisher:	**Capcom**
Developer:	**In-house**
Release:	**Out now (Jap)**
Size:	**32 Mbit**
Origin:	**Japan**

It's that time of year again; the time when grey importers start smiling smugly to themselves at the prospect of charging ludicrous amounts of money for the next *Street Fighter II* 'upgrade'. Sadly, the lack of an original Capcom fighting game means that the *Street Fighter* phenomenon shows little sign of letting up just yet.

Super Street Fighter II was very successful in the arcades. The music was beefed up (with the help of QSound), the graphics were redrawn and the existing fighters acquired a few new moves. Capcom also invited four new fighters to join in the tournament. Rumour has it that this quartet was due to appear in the long-awaited *Street Fighter III*, but SNK's poaching of key Capcom staff led to the game being put on ice, and so T.Hawk, Fei Long, Dee Jay and Cammy found themselves appearing alongside established stars in yet another *Street Fighter II* remix.

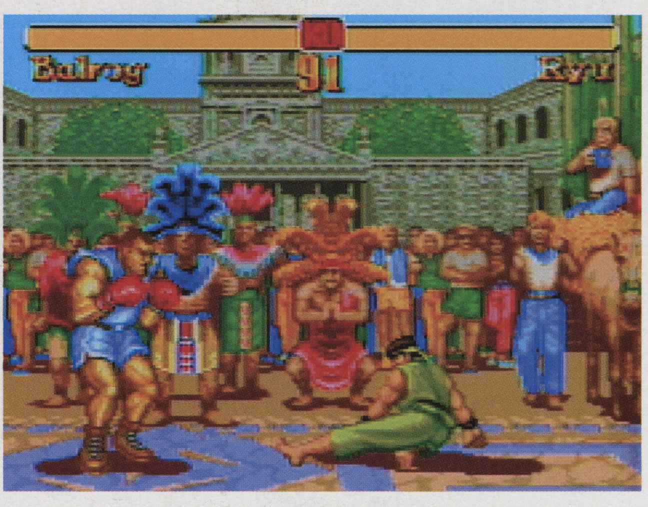
Capcom have done a good job of replicating the look and feel of the coin-op, but, this being a 32meg game, it could have been even better. The graphics are colourful but they're not particularly crisp, and some of the new backgrounds look a little sketchy. However, all the 'Super' moves are here, and the in-game sound effects have been revamped.

There's still some doubt about whether Capcom will include the 'Turbo' extras from their recent arcade smash in the SNES version. A 'game speed' feature looks likely – the arcade game was too slow for most people's tastes – but Capcom are keeping very tight-lipped about other features. **Edge** doesn't think they'll make many friends if they decide to release a *Turbo* edition as next year's *Street Fighter* game – especially with the imminent *Mortal Kombat 2* casting such a formidable shadow over the beat 'em up arena. **E**

Capcom have done a good job of replicating the look and feel of the coin-op, but, this being a 32meg game, it could have been even better



Chun Li throws back the present Ryu bought her for her birthday (main), while Balrog is greeted with a fist to the chops (insert)



This Mexican backdrop is the one most faithful to the arcade game. The watching locals cheer as Ryu's footsweep fails to connect

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3DO

Roadshow Venues

23-24th July
Thorpe Park *Surrey*

26-28th July
New Forest Show *Brockenhurst*

30-31st July
Fairford International Air Tattoo *Gloucester*

2-7th August
Swanage Regatta & Carnival *Dorset*

9-10th August
Lakeside Thurrock *Essex*

12-14th August
Northampton Balloon Festival

17-21st August
Airborne '94 *Eastbourne*

24-27th August
Dartmouth Royal Regatta

29-30th August
Aintree Show

1st Sept
Bucks Show *Aylesbury* TBC

3-4th Sept
Sheffield Show

7-13th Sept
Chessington World of Adventures

21-25th Sept
LIVE '94, Earls Court *London*

28th Sept. -4th Oct
Lakeside Thurrock *Essex*

9th Oct
East of England Autumn Exhibition *Peterborough*

11-15th Oct
Medowhall Centre *Sheffield*

17-22nd Oct
Merryhill Centre *Brierly Hill West Midlands* TBC

24-29th Oct
Fairfield Halls *Croydon*

2nd Nov
City of Portsmouth Firework Display

4th Nov
26th Big Night Out *Suffolk*

7-12th Nov
Clifton Moor Centre *York*

14-18th Nov
Metrocentre *Gateshead*

These details correct at time of going to press. For further info call: 0800 444 220



In 1988, Sony signed a deal with Nintendo to make a CD-ROM player for the videogames giant. The result would have been a Super Famicom-compatible console called the PlayStation

It was intended to secure Sony a foothold in the videogames industry. Yet it never happened. So Sony went it alone. Now the PlayStation has been reborn

With a Japanese launch less than six months away, and a hardware spec turning the heads of the world's best software developers, Edge wonders if this could be the start of something *really* big

Sony PlayStation

Tech Specs

CPU
R3000A 32bit RISC chip @ 33MHz
Clearing capacity: 30 MIPS
Bus bandwidth: 132 Mb/sec

3D Geometry Engine
(High-speed matrix calculator)
Clearing capacity: 66 MIPS
1.5 million flat-shaded polygons/sec
500,000 texture-mapped and light-sourced polygons/sec

Data Engine
Clearing capacity: 80 MIPS
CPU, direct bus connection
Compatible with JPEG, MPEG1, H.261 files

Sound
ADPCM, 24 channels
Sampling frequency: 44.1Hz

Graphics
16.7 million colours
Resolution: 256x224–640x480
Sprite/BG drawing
Adjustable frame buffer
No line restriction
Unlimited CLUTs
4,000 8x8 pixel sprites with individual scaling and rotation
Simultaneous backgrounds
360,000 polygons/sec

Memory
Main RAM: 16 Mbits
VRAM: 8 Mbits
Sound RAM: 4 Mbits
CD-ROM buffer: 256K
Operating System ROM: 4 Mbits
RAM cards for data save

If it's not realtime it's not a game. Thus spoke **Akira Sato**, director of Sony Computer Entertainment. (SCE). This statement is an important clue to the logic behind the $500 million that Sony are reputed to have sunk into the development of the PlayStation – scheduled to go on sale at the end of this year in Japan and next year in the US and Europe. 'What PS-X provides is realtime movement on a games machine,' claim Sony. 'This gives the customer a new type of game quite different to anything that has existed so far.'

Since Sony started showing off its hardware to developers, excitement in the development community has been mounting. In Japan alone, 164 thirdparties have

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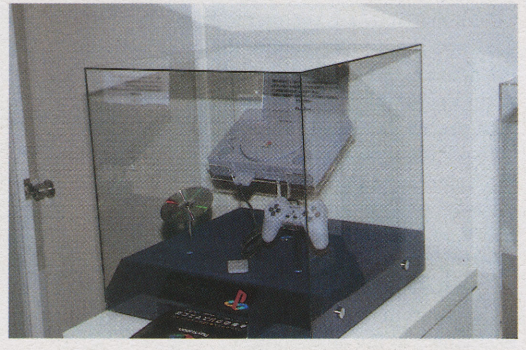


SCE's Akasaka Oji building in Minato-Ku, Tokyo (above). SCE vice-president Teruhisa Tokunaka (left) recently unveiled the PlayStation

Continued

signed development contracts (56 of these are still to announce their identity). In Europe and the US, the enthusiasm to develop for this breakthrough format has been described as 'unprecedented'.

Although developers are still circumscribed by complex non-disclosure agreements which prohibit them from furnishing specific details about the machine, a couple of unnamed developers have assured **Edge** that Sony's machine is in a class of its own: 'It could do *Galaxian*³ without breaking into a sweat, and without disc access,' said one. 'It's going to revolutionise the way computers are at the moment,' offered another. Even though Sony have virtually no track record when it comes to the games hardware business, they have already convinced a confused and creatively hamstrung industry that their platform offers new directions for gameplay. And that's a seriously big pull for an industry that's been regurgitating ideas for almost a decade.



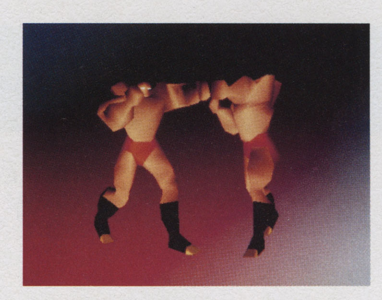
The PlayStation hardware was given a public unveiling at the Tokyo Toy Show. Sony chose not to make a big noise about the system and no demos were on display

Sony's research

facilities in Japan have long explored different technologies in the fields of computer graphics, image processing and animation. The development of the PlayStation grew from a number of disparate discoveries in a Sony laboratory dealing with broadcast videotape recording and digital picture processing techniques. 'Rather than producing abstract concepts about the kind of games machine which might exist in the future,' explained a source at Sony Computer Entertainment, 'we decided to see what kind of machine could embody these discoveries. The PS-X began when we brought together various research directions and ideas about computers with enhanced performance.'

Sony Computer Entertainment was incorporated in Japan in mid-November with joint capital from Sony Corporation and Sony Music Entertainment. It employs around 250 people working on the PlayStation project, around half of which are hardware and software engineers, with the rest from other, more established, arms of Sony Music Entertainment Japan and Sony Corp.

Only in the last few weeks have SCE's marketing and public relations departments been kicked into gear. On May 20 a press conference was held in Japan during which vice-president Teruhisa Tokunaka demonstrated a mock-up of the machine and talked about Sony's plans for the system. To coincide with this, Sony placed a two-page teaser ad in a wide selection of Japanese gaming and consumer magazines, revealing the PlayStation's design and using an unconvincing joypad-wielding Santa to hint at a Yuletide release. More recently, visitors to the Tokyo Toy Show in June got their first look at the machine.



This fighting demo features polygon characters which are Gouraud-shaded and animated in realtime

As first revealed in **Edge** 6, the PS-X isn't being targeted at the multimedia sector; it's a games machine, with performance worthy of a workstation. There are longterm plans to allow the system to be networked (with the aid of a serial port connection), but it's clear that Sony have decided that the games market is their prime concern at the moment: 'We considered what would be the biggest market for this year or next year – what kind of entertainment our customers would want – and decided it would be games. The Japanese home games market – in terms of machines and software – is worth ¥500 billion [£3.1 billion]. The American market is twice that size and the European market is one and a half times that size. So the concept was to provide hardware and software aimed at this market. What we didn't want to do was simply jump in and take a part of the existing market.'

In hardware terms, the PlayStation is a formidable beast; Sony claim that it has a combined processing capacity of around 500 million instructions per second (MIPS) – as a raw comparison, 16bit consoles like the SNES and Mega Drive can handle around 1 MIPS. At the heart of the system lies a 32bit RISC CPU (an R3000A running at 33MHz). There are also four other processors: a 66 MIPS high-speed matrix operating processor (for calculating ultrafast 3D polygons); a

'We considered what would be the biggest market – what kind of entertainment our customers want – and decided it would be games'

'There is no real difference between the Famicom and the SFC... the hardware being sold today is getting on for ten years old'

graphics processor for displaying sprites and polygons at 60 frames a second; a sound processor for reproducing CD-quality sound; and an 80 MIPS data expansion engine for decompressing graphics and sound data from the CD-ROM at high speed. Having been brave enough to commit themselves to CD-ROM, Sony have designed a system that will effectively ease the traditional problem of slow data transfer.

Sony believe that the videogames market has stagnated and that gameplayers are waiting for a machine like the PlayStation. 'In our opinion,' said one Sony official, 'there is no real difference between the Famicom and Super Famicom. When the Famicom came out it had a huge impact because all at once people could play computer games at home. You could stay at home and play the games you used to in arcades. But the same kind of impact wasn't felt when the Super Famicom came out. All the SFC has offered is an extension to the Famicom's performance – the gameplay is usually no different to the stuff they'd already had for years on the Famicom. Not to put too fine a point on it, the hardware being sold today is getting on for ten years old.'

Sony's comparison with the Super Famicom is apt. In many ways the PlayStation reflects the design sensibilities of the 16bit Nintendo: the matt grey finish, the red, green, yellow and blue logo, and the superbly ergonomic joypads.

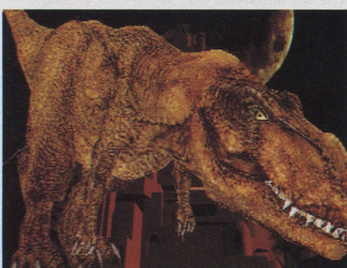
It's clear that Sony have tried to ensure that the PlayStation provides the gamer with everything they could possibly want from a system. The joypad is a case in point. Following Nintendo's success with the extra L and R buttons at the top of their SNES pad, Sony have gone one step further and slapped another two buttons on the top. This makes it possible for the player to access angles of view that would be awkward, if not impossible, to achieve on a conventional joypad.

Another worthy innovation is the inclusion of battery backed-up memory cards that plug into the front of the PlayStation, allowing game data to be saved. In-built SRAM, as used in the PC Engine Duo and Mega CD, soon gets filled, so Sony plumped for IC-card technology and plan to make a range of cards available with different memory sizes – a typical card will have a data capacity of around 1 megabit.

The PlayStation's most exciting feature by far, though, is its multiplayer link-up potential. The machine will be packaged with a lead to enable it to be connected to another machine, and an adaptor is on the way which will allow up to eight machines to be linked together at once. This provides opportunities for creating phenomenal software. With Namco's *Cyber Sled* already on its way, it may not be long before players can experience link-up games just like they're played in the arcades. Sony also have distant plans for a modem or even a hard-disk drive.

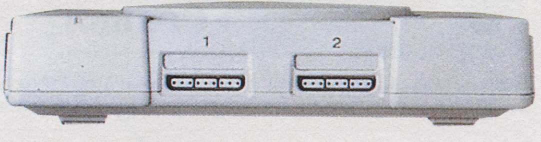
Sony's sales projections for the PlayStation in Japan are ambitious, to say the least: between

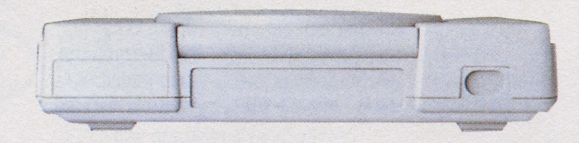




The dino-head demo seen in Edge 6 has now gained a body. Constructed from thousands of polygons, this beast can be manipulated in realtime



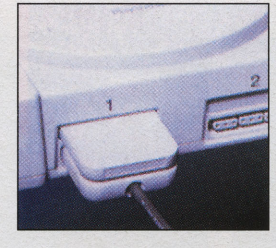


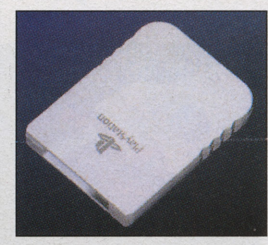




From top: the final unit could have a slightly different finish; the front of the machine shows the joypad ports, with the memory card slots located above them; the rear of the machine will contain a serial port for multi-link-up as well as S-video, video and audio connection; the joypad (side view – inset) has been expertly designed with four top buttons to access varied angles of perspective

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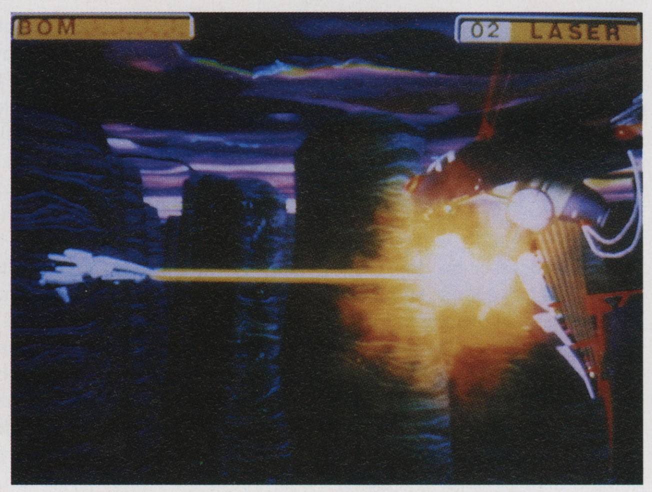


One impressive feature of the PlayStation is the ability to plug in RAM cards (right) to save data. Players have their own cards for saving personal scores and game data. The cards fit into a slot above each joypad port (left)

Sony PlayStation



Wildtrax **fans should enjoy this SCE homegrown title,** ***Polypoly Circus Grand Prix*** **(working name), which features five comical characters**



Ora 194 **from SCE: this side-scrolling shoot 'em up features true-perspective 24bit backgrounds and should be available at launch**

Continued

December '94 and June '95 they expect to shift around a million units, with a further two million predicted for the remainder of 1995.

While Sony's machine will naturally be on sale in the traditional retail games outlets in Japan, Sony are planning to use their own established retail distribution network to get the machine into record and household appliance shops. 'We've always said that the established retail games distribution route is quite right for Nintendo and Sega as long as their business is based on ROM cartridges,' said a Sony insider. 'But it will have to change when they start using CD-ROM.' Sony's aim is to get the machine out of the games shops and into the public eye: 'The business won't work unless there are shops which children find accessible, and where they'll go even when they don't buy anything.'

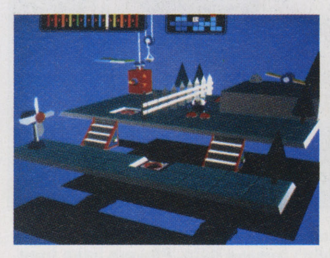
Japanese hardware launches have traditionally tended to rely on a small number of available games and Sony's plan is to release about five games every month from launch, with 27 titles slated for release. 'This isn't a numbers game,' Sony claim. 'Rather than providing a huge diversity of choice, we have to make the kind of impact that convinces customers that software which exploits the PS-X's potential is really something special. Unless we do that, they may as well just go on using the SFC.'

Fortunately for Sony, companies like Namco are already lining up arcade conversions of state-of-the-art coin-ops as a showcase for Sony's machine (see **Edge** 8 for an interview with Namco about the conversion of *Ridge Racer*), but there is already speculation about whether Sony themselves will be able to carve a reputation for themselves as producers of original and quality titles – like Nintendo became famed for, in fact. And will Sony choose to have a character like Mario or Sonic representing the PlayStation image?

'We're certainly thinking about this. Mario was necessary for Nintendo and Sega needed Sonic, but we think we should put out a game that we can use to symbolise the PlayStation, and not just invent a similar videogame character. The PS-X produces completely realistic characters, and these might be used in a cartoon or video. We must produce something we can point to as a kind of shorthand for what makes the PS-X special.'

Such 'special' software is expected to come attractively priced at between ¥5,000 and ¥7,000 (£30-£40). Sony Computer Entertainment hope to substantially undercut current cartridge software pricing with their own range of CD titles,

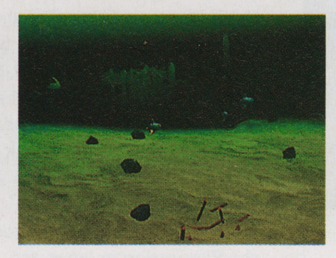
'Mario was necessary for Nintendo, and Sega needed Sonic... We should put out a game we can use to symbolise the PlayStation'



Morikawa 2 **– a 3D robot simulation with artificial intelligence (SCE)**



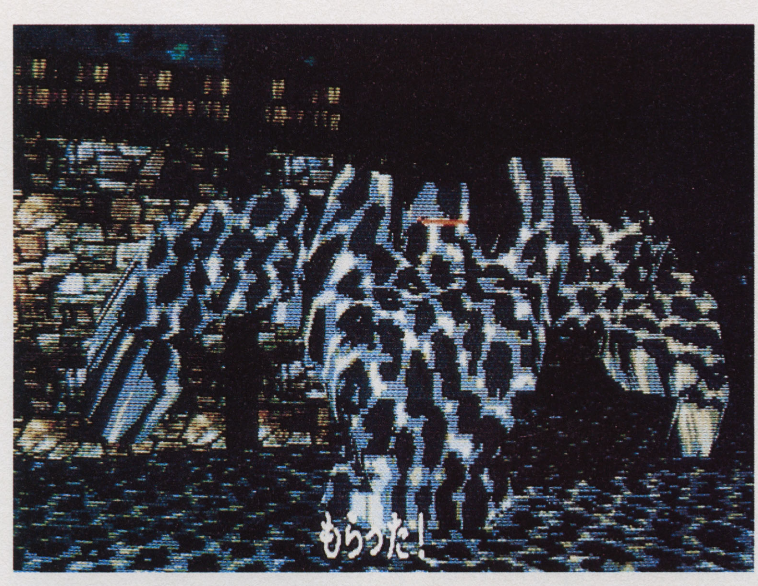
Arc The Red**: an RPG with battle and movement on the same plane (SCE)**



A 3D polygon adventure set in an underwater world (Artdink)



Zero Divide **– a futuristic** ***Alone In The Dark*****-style action game (Zoom)**



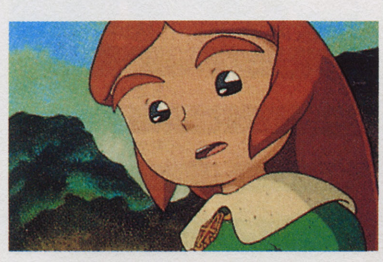
***Labyrinth* (aka *Legend* in Edge 9), features a dungeon modelled entirely in realtime (it runs in one frame!) and with unlimited viewpoints controlled by the joypad**

and are charging developers less than Sega or Nintendo do: 'We've considered the producers; we don't want to cut their profits in order to sell more software.' Sony have tried to made development tools as affordable as possible; programming and artist tools weigh in at around ¥1.5 million (£10,000) in Japan.

This approach to software development means Sony have attracted not only big, well-established companies like Capcom and Konami, but also many new software developers and, encouragingly, the UK programmers associated with so many classic 8bit games in the 1980s. 'That's something that's very important,' say Sony. It's our mission to foster new programmers. Once people have bought the PS-X, they will stick with it until they become bored with it, or it becomes obsolete; software is the single most important factor.'

The PlayStation's price is something Sony are keeping close to their chest until nearer the launch – all they have said is that it will be less than ¥50,000 (£300). But insiders are claiming that a price of between ¥20,000-30,000 is far more likely, and an even lower figure is being touted.

With Sony targeting the PlayStation at the 12-22 age range, price is everything. 'If we don't get these customers, we're finished,' one source confided. 'Of course, we would also like to attract people younger and older than this – even games designed to be played by the 12-22 age group might be acceptable to a more mature audience. But that's in the future. If we don't focus on the main target consumers, we won't be able to sell millions of machines. And if we don't sell millions, we won't be attractive to thirdparty software houses.'



***The Tale Of Poporokuroisu* – a *Zelda*-like RPG with great characterisation (SCE)**



***Crystal Dragon*, an action RPG with 3D polygon mazes (From Software*[sic]*)**

Release Schedule

Over 80 titles are in development for the PlayStation worldwide. Here's the first Japanese release schedule

Artdink		
A.IV	Simulation	End '94
TBA	Adventure	TBA
Ascii		
Kakimoti Shogi	Board game	Launch
Go for PS-X	Board game	March '95
PS-X Derby Stallion	Simulation	TBA
Ask Kodansha		
Hybar Mahjong	Board game	Feb '95
Hybar Co	Board game	May '95
Asmik		
Calliotte's Castle	Adventure	1995
Insider		
Takashi Takano's World Map-reading	TBA	Aug '95
Centre Test Trial Game	TBA	Aug '95
Virgin Games		
11th Hour	Adventure	End '94
Demolition Man	Action	TBA
Indycar Racing	Simulation	TBA
Coconuts Japan		
PS-X Bachi-kun	Board game	TBA
Bashisuro	Board game	TBA
Casino Special	Board game	TBA
Soccer Special	Sport	TBA
Konami		
Ultimate Parodius	Shoot 'em up	1994
Powerful Pro Baseball	Sport	1994
Secret project	TBA	TBA
Success		
Kanadeeru	TBA	Summer '94
Four Masters	Puzzle	End '94
Sun Electronics		
Mahjong	Board game	End '94
Gainax		
Princess Maker	Simulation	Summer '95
Capcom		
TBA	Beat 'em up	TBA
TBA	RPG	TBA
TBA	platform	TBA
Stage Instruments		
You're The Star	RPG	TBA
Save Development		
Thunderbolt Series	Shoot 'em up	Launch
Sony Computer Entertainment		
ORA-194	Shoot 'em up	End '94
The Tale Of Poporokuroisu	RPG	Summer '95
Come On, Morikawa #2	Puzzle	End '94
PolyPoly Circus Grand Prix	Racing	End '94
Red Prime	Action	Summer '95
V-Zone	Board game	End '94
Fujimaru: Adventures In Hell	Sim/RPG	Summer '95
Arc The Red	RPG	Summer '95
Sony Music Entertainment		
TBA	Adventure	End '94
Sofel		
Sofel Fantasia	RPG	End '95
Taito		
TBA	Shoot 'em up	Jan '95
TBA	Simulation	April '95
TBA	Sport	July '95
Tecmos Japan		
Bloxx	Puzzle	TBA
Tengen		
Race Drivin'	Racing	Launch
Tema	Action	Launch
Toei Systems		
Blackout	Adventure	Summer '95
Topline		
Hamlet	RPG	End '94
Human		
Formation Soccer	Sport	April '95
Four Two Two		
Sarudahiko's Codes	TBA	April '95
Profire		
Live Remix	Interactive movie	TBA
From Software		
Crystal Dragon	RPG	End '94
Namco		
Ridge Racer	Racing	TBA
Cyber Sled	Shoot 'em up	TBA
Starblade α	Shoot 'em up	TBA
Nihon Bussan		
Deadbeat Road	Racing	1995
Super 2015.Q	Flight simulator	1995
New		
PS-X Boxing	Sport	End '94
Neorex		
Cosmic Race	Racing	Launch
Pony Canyon		
Metal Jacket	Shoot 'em up	End '94
Polygram		
Twin Goddess	Beat 'em up	End '94
Right Stuff		
Blue Forest Tale	RPG	End '94
Rainbow Japan		
Tokyo 2020	Adventure/RPG	TBA
Seibu		
Raiden series	Shoot 'em up	TBA
Ving		
TBA	Shoot 'em up	TBA
Zoom		
Zero Divide	Action	Launch

Namco

The creators of some of the best arcade games ever are also backing Sony's system. With a catalogue of legendary coin-ops behind them, they talk about their hopes for the PS-X's future

Continued

'The PS-X will start out as a games machine and be priced accordingly. For the time being, Sony are putting games first'

Basically, we are committed to making PS-X games software as a third party, although there is some technical co-operation with the arcade products too. Sony will be selling the PS-X as a games machine and we support this vision heartily as a games company.

At this stage, I can't comment on any drawbacks of the system, but based on the catalogue specs of the PS-X, it's a superior system and includes some great hardware characteristics. For example, PS-X not only supports 3D but also traditional 2D scrolling and sprites, so while we think we can manage games like *Ridge Racer* and *StarBlade* with few problems, we can also convert *Famista* (*Family Stadium*) and other popular Famicom and SFC series to the PS-X.

As far as possible, we hope to handle all genres – not only polygon games, but also new types of software which exploit the hardware's characteristics and the characteristics of the CD-ROM. And we must make corresponding improvements to the video and audio aspects. We must make software that will satisfy users who have bought this expensive hardware. We are still at a relatively early stage of development, but we hope to develop software by the time the hardware goes on sale at the end of the year. But the schedule is very tight.

Strategically speaking, we must consider development not only in Japan but also in the USA and Europe. Nintendo have the highest market penetration in Japan but Sega are ahead in the the USA, so we have to consider a policy of diversified development. We mustn't only develop for one kind of hardware. However, there are limits to our development and marketing power so we can't just take on every project. When the SFC appeared, we couldn't have predicted that the FC would be replaced by the SFC so rapidly, and we don't know whether the next-generation machines will supplant the SFC. But SFC software seems to be reaching its limits, so there may be a tendency to switch. The software will be an important factor in this.

Although we may have reached the point where improvements in hardware specification make demands on development ability, that doesn't mean that the standpoint of the games developer has changed. The only change that has taken place is that we can now do things we couldn't do before, such as being able to exploit CD-ROM to create games.

Games are not simply matters of exploiting 3D and CG. Even with the improved performance, a game like *Tetris* will still be fun to play on the PS-X, so it's not necessarily the case that big companies will survive and small companies disappear. However, it is vital to have as many able workers as possible. And we have used PCs to develop software up to now, but this will not necessarily be the case in the future, and this will involve considerable new investment. Large companies will be faced with this burden as much as the small ones.



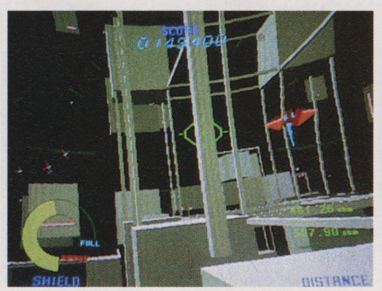
Namco's R&D headquarters in the Tokyo suburb of Mirai Kenkyusho. Last year a deal to develop for the PlayStation was signed with Sony

In the meantime, we hope to have something ready in time for the launch, as well as continuing to develop for the Mega Drive and Super Famicom, which are doing well overseas.

NB: See ***Edge*** *8 for an interview with Namco's R&D department in which the development of Ridge Racer and its conversion to the PS–X is discussed.*



Will PS-X *Ridge Racer* include *Ridge Racer 2*'s twoplayer mode? (arcade shot)



***Starblade* (arcade shot) will be translated into a new PS-X version, *Starblade* α**



***Cyber Sled* (arcade shot): another potential link-up game on its way**

Capcom

After creating some of the most polished games for the NES and SNES, the Osaka-based company has set up a new R&D division to focus on the PlayStation. Will a new Capcom emerge?

We have decided that there are technical and business advantages for us to participate in the software for the PS-X, 3DO and the other next-generation machines. But we can't comment on titles yet. In the case of the PS-X, we have signed an agreement with Sony which will determine our plans. We will make an announcement as soon as the software has been decided.

At the moment, we're a software company with no next-generation software, but we will naturally supply software for the most popular platform. Until recently, Nintendo had 90% of the market, so they were an automatic choice. If the next-generation machine being developed by Nintendo takes 90% of the market, it would be enough to create software for that, but if the market expands by 30% and Nintendo's share falls to 70%, then supplying software only to Nintendo would not make business sense. With the future so uncertain, the solution is to adapt for a range of hardware.

Also, developing for a range of machines is important so that we don't fall behind with the technology. All the next-generation machines, not only the PS-X, have features which are overwhelmingly better than the previous 16bit machines, but without experience, development for new hardware is very difficult. The PS-X is the best for 3D graphics, but there are no more than ten companies that can produce proper polygon games.

As for genres, we don't want to focus just on action. *Street Fighter II* and *Rockman* have led to us being stereotyped as an action game company, and we are considering all kinds of directions and the developers are studying various tools and producing various plans.

Development times are unpredictable, so we don't know what games will be released first for the PS-X. This is the case whatever the hardware – when we started on the SFC we worked on three different genres simultaneously, and we could never predict what would be completed first.

However superior the spec of the PS-X is, it will take time to be able to use it effectively. For example, the quality of the first Famicom games was quite inferior to that of the later games. And the same was true of the SFC and the Mega Drive. The problem is not the hardware, but how software houses can make use of the hardware. We can't make any assessment of the hardware until we are able to use it properly.

The PS-X's CD-ROM will make it possible to supply high-quality software cheaply, which will benefit our customers. It also means we can be more adventurous at the development stage of the software. We must always remember that games are sold in toy shops and bought by kids, and it is hard on kids if they can't buy two games for ¥10,000 [£60].

CD-ROM will lead to a tremendous improvement in game music. It will also be possible to attempt major projects in which people who have talents in art, music, movies and other things take part in creating games from the start. Games may be called 'children's toys' at the moment, but the market is going to expand. With Sony and Matsushita coming onboard, consoles will be regarded more as domestic appliances, and adults will be more likely to buy them when the CD is a feature.

The new machines are called 'next-generation', but this is meaningless if the games for them are boring. If we don't produce enjoyable games, the market will die. The manufacturers themselves feel that the situation last year, when there were only a few machines, was not good. The market will collapse if there is a run of years with no original software, so an environment in which it is possible to try out new things must be created soon. I think each company should have at least two teams which can carry out ongoing development until they produce enjoyable games. The people who suffer most when useless games come out are the children who buy them.

'All of the next-generation machines, not only the PS-X, have features which are overwhelmingly better than the 16bit machines'

Continued next page

Capcom have a platform game for PS-X: *Ghouls 'n' Ghosts*, maybe? (Arcade shot)



***Super SFII Turbo* (arcade shot): a sure-fire contender for PlayStation conversion**



***Breath Of Fire* (SFC shot): Capcom are developing an RPG for the PlayStation**

Konami

With 11 titles already in the pipeline, Konami are heavily committed to the PlayStation. It is also rumoured that the company's deal with Sony extends to arcade-based projects

'Playability will not depend on hardware specs. Games won't all become more fun simply because there is new hardware'

Our basic intention is to create and sell software for the PS-X, although we are considering some technical co-operation as well. The hardware has increased in spec to such a degree that we can't think of any reason for not participating.

Price and distribution details have not been made public yet, and we can't divulge anything about games titles, as development isn't complete. But we intend to produce software that will not disappoint the consumer. We will be able to reveal everything in the summer.

Schedules are very tight but we are trying hard to be ready in time for the launch. We don't think we'll be able to exploit the hardware's performance fully from the outset – we're unlikely to be able to draw 100% of the hardware's performance from the beginning – but after a year or two we think we should be able to get 100% or 120% of the performance. The same was true for the SFC. We will continue to learn about the machine during the development process. It should eventually be possible to transfer arcade games without a great reduction in quality. As we are an arcade manufacturer, the appeal of our home software for the PS-X will be its high technical standard.

Even if the next-generation machines become dominant, playability will not depend on hardware specs. Games won't all become more fun simply because there is new hardware. The only thing to change will be the technical performance. There may be more opportunity for producing fun games than with previous hardware, but the responsibility of producing really enjoyable games is down to the people who produce the software: us.

Developing software for the next-generation machines will be the same as for any other machine. Our basic task will continue to be to design and develop software that matches what our customers want. It is inevitable that some software will be more successful than others.

We don't yet know for certain how the PlayStation will compare with the other next-generation machines. We consider the quality of the software to be a more important issue. Some of the new machines will be designed primarily for games, while others will be designed for multimedia software.

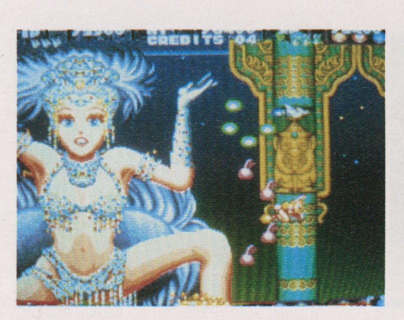
It is games that achieve reputations (via magazines and word of mouth). Sony have said that they are seeking a good public response from the PS-X, which means that the PS-X is games hardware.

There is no clear definition of multimedia, and we are not taking a lead in developing for multimedia. If a lot of multimedia software is marketed without much thought, the customer will have a hard time deciding what to buy. The most difficult software to develop is games, but leading-edge games will be adaptable to the multimedia age regardless of future developments.

The 32bit/64bit machines will not become dominant straightaway, and smaller companies, who lack development resources, will not find themselves unable to cope. All the companies are fighting in the same ring, and the balance in the software industry will not be destroyed.

The next-generation machines will become dominant more quickly if the software is good. Judging by the progress of previous hardware, it will take at least a year for the average customer to assess the next-generation machines, unless there is some really good software.

We want to create good software for good hardware. If hardware performance improves, we will prepare software to match these improvements. Our aim is to produce software that our customers will welcome, and this remains constant even if the hardware changes. It is inevitable that hardware will continue to evolve.



A conversion of *Ultimate Parodius* is one of the possible launch games (arcade shot)



Powerful Baseball '94 is a follow-up to Konami's recent 16bit game (SFC shot)



Konami's R&D HQ in Kobe is working on 11 titles for the PlayStation

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The CD-i is in many ways the poor relation of the CD family. Conceived as an all-purpose multimedia platform, it has seen its birthright plundered by its more glamorous console cousins. **Edge** follows the format's fight for self-improvement



CD-i

Philips reinvents



At its launch, Philips' 16bit CD-i machine was trumpeted by its creators as a revolution: an all-singing, all-dancing CD system that would provide a short cut to the multimedia world of the future. Such optimism soon faded, though; in a market that was demanding pure games platforms, CD-i looked likely to suffer the same fate as Commodore's abortive CDTV. Now, however, against all the odds – and thanks largely to a £3,000,000 advertising budget – CD-i seems to be undergoing something of a renaissance. But with the much-vaunted 'next-generation' machines on the horizon, even the introduction of the new console-styled 450 CD-i may not be enough to ensure the format's survival.

CD-i as a concept made perfect sense when it was first mooted in the mid 1980s. Despite Philips' collaboration with Matsushita on the development of the Digital Compact Cassette (DCC), the Dutch-based multinational recognised that the CD (also created by Philips, together with Sony) was the medium that would dominate the foreseeable future.

And it was a future that was already upon them. Video, photographs and application software were starting to be stored on CD, as well as audio recordings. This made a truly multimedia system a viable proposition. With audio already well established in the marketplace, Philips' reasoning was that it wouldn't take much to persuade the public to make the conceptual leap between the simple audio CD and its multimedia offspring.

Although CD-i wasn't launched until the end of 1991, the first provisional spec for the machine had been issued more than five years earlier, in June 1986. Philips and Sony then proceeded with development work on the full functional spec, which came to be known as the Green Book and was finalised in November 1988.

Considering the current ferocity of CD platform rivalry, it's ironic that three of the biggest corporations involved – Philips, Sony and Matsushita – announced in May 1989 that they would join forces. The promotion and marketing of Interactive Compact Disc was given as the primary reason for this move, although the aim of further technical development was also an important factor. However, corporate politics eventually saw the alliance dissolve.

Throughout this period of development, what Philips envisaged finally marketing to the consumer was a player that would simply link into existing home entertainment systems. Hence its initial, deeply mundane styling: the machine took the form of a largely featureless box, which could be placed on top of a VCR or added to a hi-fi stack without looking out of place. However,

Continued next page

Philips CD-i



Philips were unprepared for the difference between their projected market and the people who actually bought the machine.

What Philips firmly believed at the outset was that demand for CD-i would follow the model for audio CD, which during the period of CD-i's development had completely overwhelmed vinyl. It was a reasonable assumption on Philips' part that, like audio CD, CD-i would first make an impact on the middle to upper income brackets, consisting of people with relatively mature and conservative tastes, before beginning to penetrate the 'lower' social strata. But they were wrong.

'What we discovered from day one,' says **Simon Turner**, senior vice-president, Europe, Philips Media Distribution, 'is that our profile is absolutely a massmarket profile. Right from even the first year we found that 40% of buyers had family incomes of below £17,500. Right now, if I look at our owners, 40% of them are Sun readers. We have a profile much more like the satellite market than the traditional growth in the audio areas.'

And what that basically translates into is a demand for games.

The first consumer CD-i player, the 205, was launched in the US in October 1991, with a UK launch in May 1992. It was slightly bulkier than the 220 player which superseded it within a couple of months as manufacturing costs came down, although essentially there were no technical differences between the two. In line with Philips' preconceptions about how the market would behave, it was designed as a multipurpose player. It was not designed as a games engine. Simon Turner confirms this: 'It is not supposed to be a games machine. It was never designed to be and we will never position it as such.'

A good job, too, as the poor standard of software available at launch and the design limitations of the 220 player as a games platform meant CD-i was thoroughly outclassed by Sega and Nintendo. To Philips' credit, though, especially considering the debacle of the 3DO and CD^{32} launches, the company managed to ensure that there were approximately three dozen titles available on the launch dates on both sides of the Atlantic. The problem was that few of them were distinctive enough to grab any attention. As **Julian Lynn-Evans**, Philips' senior vice-president, games, admits: 'I think it's fair to say that Philips didn't properly appreciate the key role of games in their software catalogue. They sidelined games development when they should have mainstreamed it.'

> **'It needs to have a good range of FMV material. Provided the range is there, it's a format that will continue to grow'**
>
> **Peter Jones**, Mirage

Of all the features that ensured the initial model's unsuitability for games, the most glaring one was probably the provision of only one joystick port. (Indeed, the best-selling game of last year, Infogrames' *International Tennis Open*, initially only had a oneplayer option.) There was a serial port at the back of the machine that could be used for a second joypad, but it took quite a long time for anyone to actually realise this. Then there was the joypad itself. Philips initially experimented with an infrared control device modelled on a TV remote control, which was fine in theory but proved to be one of the most unresponsive joypads ever foisted onto the market

Both of these drawbacks were rectified with the launch of the far more ergonomically designed touchpad controller, and the addition of a dedicated second port to the refined 210 player (which also boasted a far sleeker design in recognition of its increasing use by consumers as a games platform).

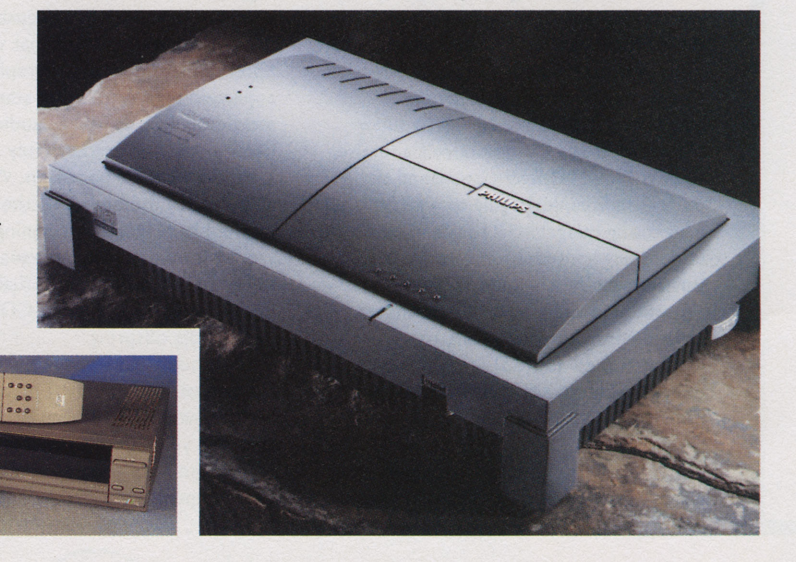
But other problems remain. The CD-i consumer model (which conforms to the Green Book standard, otherwise known as the Base Case system, co-authored by Philips and Sony) streams data off the CD at only 170K/sec – just over half the speed of Philips' major rivals, like 3DO. And these companies are themselves going to have trouble matching the speed offered by new storage media currently in development, so it's a real problem for anyone trying to develop CD-i software. For example, when animating images in DYUV, the most powerful of CD-i's four graphics modes,

The Philips 450: CD-i's next step

The Philips 450 player (right), launched at the Summer CES in Chicago, is the next-generation CD-i machine. Technically, there's no difference between it and the 210 player – all the changes are purely cosmetic – but it is a fair indication of the emphasis Philips are placing (albeit belatedly) on the games market.

One of the criticisms always levelled at the 210 (inset) was its styling. From a gamesplayer's perspective, it is just not sexy. The design of a product is a crucial part of its overall marketing, and Philips have specifically targeted the 450 at the 16-25, predominantly male, gamesplayer. The company are also marketing a restyled, dedicated DV cart to coincide with the 450's launch, as well as a new range of remote control options.

The machine comes with a built-in modem link and will sell in the US for $299. A UK launch is expected at the end of August, with a retail price of around £300.





At the rear of the CD-i 210 are: a 21-pin SCART socket, audio and composite video RCA sockets, and the accommodating recess of the FMV port, for connection to the DV cart

Philips' £150 Digital Video cart, which includes the MPEG1 chipset

which offers true colour from a palette of 16.7 million, the 170K/sec limitation would mean the display running at 12.5 frames per second on only 13% of the full screen. Okay, so the MPEG compression routine can bypass this problem, but anything fast has to be pre-loaded into the machine's 1.5Mb of onboard RAM, which can lead to major headaches.

'Basically,' says **Denise Proctor** of Perfect World, who developed the *Worlds Of...* music disc for CD-i, 'because you've only got that amount of memory to play with, you can't always take realtime images off a disc. You have to write stuff to memory so it's there immediately you need it. The trick is juggling everything, using the memory to the best ability, but it's incredibly difficult.'

According to Denise, 3Mb of RAM would significantly ease the problem, but juggling is a way of life for CD-i programmers – balancing the available memory in RAM with the four different graphics modes and four audio options. Realistically, to have moving images onscreen you have to at least descend to the Colour Look-Up Table (CLUT) encoding method, which selects 256 colours from the full palette. For fullscreen animation, though, you have to descend even further to the Run-length 7 mode, which only provides 128 colours – unless the FMV option is employed.

Also, the standard CD-i has no custom chips for polygon generation. Routines for this have to be encoded in game software and then run through the CPU (a 15.5 MHz Motorola 68070).

Despite these disadvantages, CD-i still has its supporters. 'I think there are some very good features in the hardware,' says **Ian Hadley** of Gremlin Graphics. 'My single complaint about it would be that I believe that the processor is underpowered for the kind of game software we'd actually like to put on the platform. Because there are no auxiliary processors, for instance, and there's no blitter available – everything is done by the processor – we have to limit the amount of animation, the amount of sprites we can move and the amount of pixels we can change and sustain a good frame rate.'

Managing director of Mirage, **Peter Jones**, whose company is currently developing *Rise Of The Robots* for CD-i release later in the year, is also optimistic, 'I think people look at the processor and think, "Ah, that's not as strong as the PC, it's not even as big as an Amiga", and all those criteria, and completely forget about the fact that here you've got FMV.'

If the technical specs of CD-i (apart from FMV) fall short of the new wave of platforms with double-speed drives, larger onboard RAM caches and custom polygon generation, the software is lagging too. Initially, the software catalogue assembled by Philips was targeted mainly at the ABC1 social group and the best way to describe it is as 'worthy'. Games, such as they were, were very basic, the software in general being heavily biased towards titles dedicated to such subjects as opera, French cookery or learning 35mm photography.

But games have now become crucial to CD-i's existence, and Simon Turner acknowledges the importance of the games market in any further growth. This is borne out by the fact that games now account for 65% of total CD-i software sales (as opposed to the meagre 15% contribution of the worthy/boring sector). But although the number of games available has increased, the quality remains suspect.

The problem has been in attracting developers to CD-i. The development of CD games is a costly business and one which no-one really wants to enter if the installed userbase is tiny. Philips tried to jump-start the whole process, as Julian Lynn-Evans recalls: 'A lot of the early titles – all of the early titles – were published, financed and distributed entirely by Philips.'

That situation is starting to change now, with far more co-publishing arrangements being put in place as the userbase increases, but so far little of real interest has turned up on the CD-i. In fact, the games available to date have generally trod the low-cost, low-risk path, with most of them being simple ports. The most disastrous ones, ironically, stemmed from a licensing arrangement with Nintendo which gave rise to *Link: Faces Of Evil* and *Zelda: Wand Of Gamelon*, but both they and last year's bestsellers, *Palm Springs Open* and *International Tennis Open* (followed by *Tetris* and *Battleships*, for God's sake) are hardly the sort of product to whip up the games market into a buying frenzy. They might have shipped a respectable number of units (Lynn-Evans gives a figure of 100,000 for *Palm Springs Open*), but they have conspicuously failed to generate enough excitement to have people rushing out to buy the actual players. Adventure games *Kether* and *Inca* are probably the pick of the bunch, but even their gameplay is limited and they only stand out because of the paucity of the competition.

But things are slowly changing on the software front. Argonaut's *Creature Shock*,

Continued next page

Philips **CD-i**



Mirage's *Rise Of The Robots* and Cryo's *The Lost Eden* are all slated for CD-i release. The fact that they are being produced in the developers' own studios corrects one of the major flaws in Philips' software programme.

Much of the conversion work on recent titles has taken place at Philips' in-house studios in Dorking. The reasons for this are twofold. Firstly, due to the risks inherent in developing for CD-i, software houses have maintained an arms' length relationship with Philips. And secondly, Philips have basically been running the operation as a training programme – about 1,000 people have taken courses there, all part of Philips' huge effort to make the platform attractive to developers.

This is all well and good, until something goes wrong. A Philips document entitled CD-i: Frequently Asked Questions guesstimates that porting from CD-ROM to CD-i is 25-50% platform specific and 50-75% platform independent. Despite that lowish rewrite percentage, though, Virgin's CD-ROM-based *7th Guest* ran into major problems. **John Norledge**, software manager at Virgin, puts this down to 'teething problems. I think *7th Guest* was the first non-linear MPEG project.'

It was very galling for Philips, though. The company had hoped that the game would be their flagship release for the traditional pre-Christmas sales bonanza. Indeed, it featured heavily in their TV campaign that autumn, before being hastily replaced by *Kether*. But worse was to come. In the snowball effect that the game's delay had – due both to the Dorking set-up and the game's prioritising by Philips – programmers were pulled off other projects to the extent that, in January '94, Philips failed to release a single title. Not good news for a company in the middle of a £3 million advertising campaign.

> **'Philips didn't properly appreciate the key role of games... They sidelined games development when they should have mainstreamed it'**
>
> **Julian Lynn-Evans**, vice-president, games, Philips

7th Guest was finally released in June. As industry weekly CTW stated: 'It takes the patience of a saint, and the skills of a clairvoyant, to work out the realities of Philips' release dates.'

It would probably have taken a clairvoyant, too, to have predicted the upswing in CD-i's fortunes at the tail end of 1993. Philips claim to have sold 2,000 units a week in the pre-Christmas period in the UK, and are currently bandying around a global userbase figure of 400,000.

The CD-i's relative success in that period is attributable partly to Philips' TV advertising campaign and partly to the company's increasingly aggressive targeting of the games market. But in terms of the longterm survival of CD-i, the most important aspect is the release of the format's own FMV option.

Gremlin's Ian Hadley agrees: 'The advent of the FMV cartridge turned it around. If I were Philips, I would just put that chipset into every box I shipped. I would not sell a unit without it. It was the creation of the FMV chip which I think gave the CD-i its boost in the marketplace.'

Philips' MPEG decoder, the Digital Video cart, subscribes to both the Green and White Book standards – although it didn't at first. The global MPEG compression standard is intended to give the consumer interchangeability between platforms, but initially Philips' FMV discs failed to work on other machines.

The reason for this lay in the timing of Philips' deal with movie giant Paramount in June '93. This predated the Video CD White Book standard, and although the contract was subsequently renegotiated to include it, Philips were already committed to a launch schedule. The result is that all FMV titles released by Philips to date are CD-i-specific; the first movie to subscribe to the White Book standard will be Indecent Proposal.

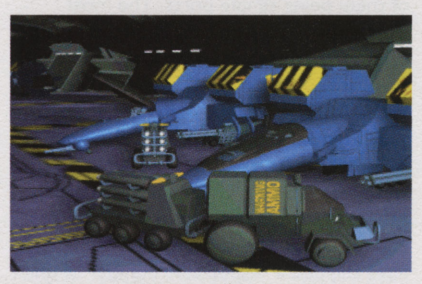
Despite this hitch, FMV is crucial to CD-i. It doesn't just open up the film market and the growing interactive music sector, but, with an extra 1.5Mb of RAM in the cart, significantly increases the options for games developers.

'What CD-i does exceptionally well,' says Mirage's Peter Jones, 'and what will establish it in the marketplace… is to be able to encrypt video sequences or long cinematic sequences that are becoming more important to games.'

CD-i players have four display planes: a foreground cursor plane; two 8bit image planes; and a background plane. FMV is displayed using the background plane, allowing whatever is being run there to be merged with, for example, sprites on the other planes. MPEG1 compression allows 74 minutes of VHS-quality video and CD-DA audio to be stored on one disc. This is annoying for film buffs who find that most films are longer than 1 hour 14 minutes, but Philips, recognising the importance of movies to CD-i's success, are introducing a carousel player later this year.

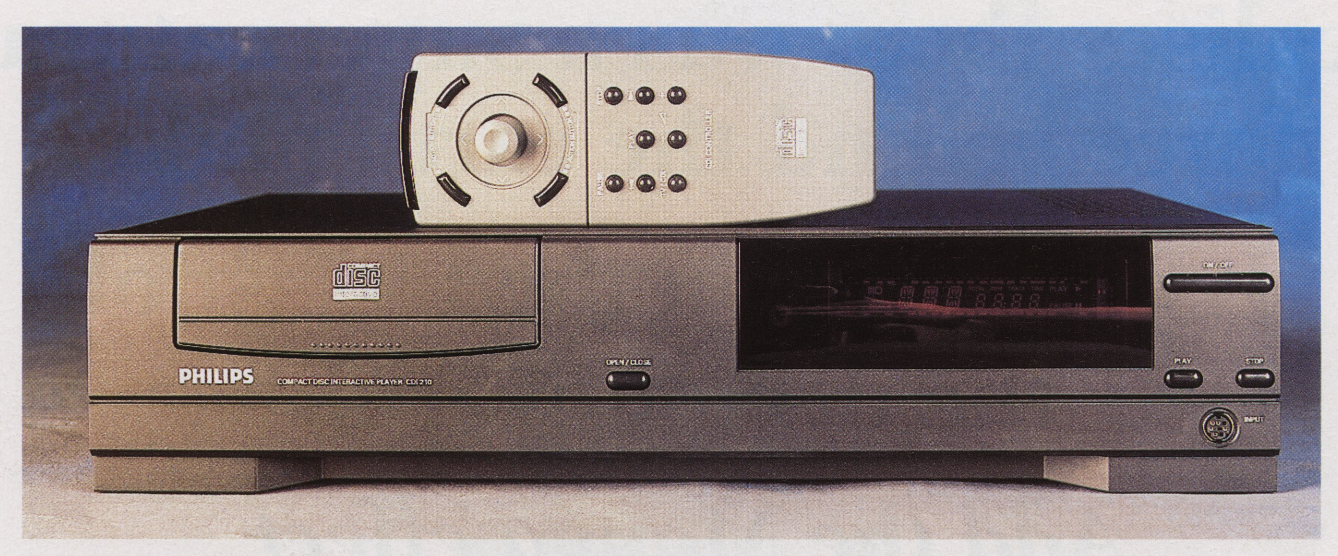
But the potential of the FMV games market could be even greater than the movie one. Peter Jones again: 'If you look at the way forward for CD product, at the moment the two main avenues are using FMV or using pre-generated, raytraced images like those in *Rise Of The Robots*. On these two main avenues for exploitation in games, CD-i comes up trumps.'

Most of the DV games released so far – *World Of Boxing* or *Space Ace*, for example – haven't exactly been world-beaters. But if developers learn to unlock some of the potential of FMV and make it an integral part of the game's structure rather than a pretty extra, the situation could improve. Indeed, with a brace of higher-quality ports in the offing, and the





Games are improving rapidly for CD-i: *Burn Cycle* from Trip Media (top), Infogrames' *Chaos Control* (middle), and *The Lost Eden* from Cryo should all help the CD-i cause



In the face of strong competition from Sega and Nintendo, Philips attempted to improve the CD-i's image, and the result was the 210 player. Boasting a sleeker design and an extra joypad port (but the same dreadful bundled controller), this is the machine that's currently available

prospect of *Creature Shock* and the heavily touted *The Lost Eden* appearing later in the year, CD-i is almost in danger of having some quality software appearing on it.

FMV is hardly a technological ace up Philips' sleeve, though; both the CD32 and 3DO are also MPEG1 compatible, with Jaguar scheduled to follow by the end of the year. However, what Philips have but no-one else does is 70% of Polygram, the record company.

The concept of the interactive music CD is something that is gradually percolating through the recording industry. CD-i is the only format so far making extensive use of a music base, and some interesting work is being done. Perfect World's *Worlds Of...* was a worthy attempt to incorporate elements of interactive gameplay into a music CD; Todd Rundgren's *No World Order* attempted the interactive angle (but failed); and Peter Gabriel's much-lauded CD-ROM, *Xplorer 1*, is in line for conversion. Add to that the techno-psychedelia of Hex's *Pulse* and The Digital Nomad's *Interactive Club Environment* and you have the beginnings of an interesting new artform.

An important one as well. **Paul Sanders**, spokesman for The Digital Nomad, states: 'I don't see how CD-i can succeed if it doesn't exploit the music market.' The simple fact is that this is one area of the interactive market where CD-i really fits; where Philips' original marketing strategy, promoting CD-i as something akin to a high-quality audio product, has some relevance. CD-i supports full CD-DA audio, and it was designed to integrate with hi-fi systems. When Philips' record company tie-ins are added to the equation, it becomes difficult to see where the machine could go wrong.

But industry insiders reckon interactive music won't hit its full potential



Poor CD-i MPEG encoding often results in blocky visuals. It's hardly a threat to VHS

until about four years hence, and CD-i has to do something in the interim. But, reckons Ian Hadley, it already has one major advantage: 'It exists. It actually sits there in the high street and you can buy it.'

To an extent, CD-i has forced Philips to reinvent themselves; they have been transformed from a hardware manufacturer into a hardware manufacturer with an active role in the development of games software. The quality of that software is still their stumbling block, but if, in the next few months, *The Lost Eden* et al can improve that situation, Philips may have a nicely bunkered position to survive the autumn onslaught of the 32bit generation. Philips themselves seem bullish; with a £6 million advertising budget for the UK alone, the company is preparing for battle.

Many pundits think the CD-i can pull it off. 'It needs to have good software on it,' states Peter Jones. 'It needs to have a good range of FMV material. It needs audio/visual material on it as well. Provided the range is there, and it's handled correctly, I think it's a format that will continue to grow.'

If it does, it will be largely due to the general move towards CD. Developers are now geared up to preparing projects from inception to completion for CD formats, and, as Julian Lynn-Evans points out: 'When that's done properly, doing a CD-i version is not an enormous difficulty.'

And with new hardware in the pipeline, Philips seem to be committed to expanding their market. The 450 player is the first market-specific machine to be launched, but a hi-fi system with a built-in CD-i capability is already in the offing, and Macintosh and PC cards are due to be released later this year. If any technical upgrades are on the way, Philips are keeping them firmly under wraps, but it is hard to see CD-i thriving in the approaching format wars without 32bit architecture and a double-speed drive, whether it is a games platform or not.

In the final analysis, CD-i is an excellent machine for delivering MPEG1 digital video and CD-DA audio. Whether that will prove to be enough is another thing.

When the President of Tokyo realises there was a supernatural force behind the earthquake.

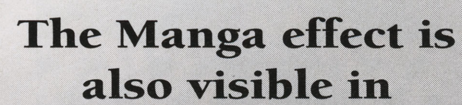
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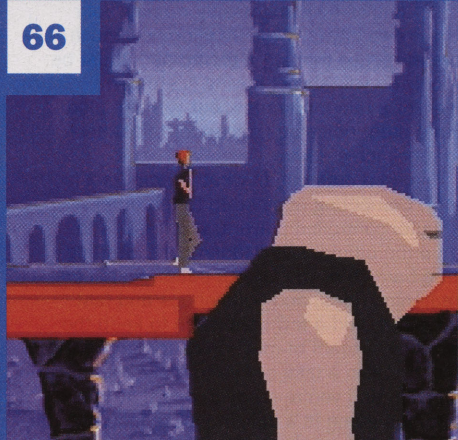


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Theme Park PC CD-ROM **Super Sidekicks 2** Neo-Geo **Wildtrax** Super Famicom **Doctor Hauzer** 3DO **Out Of This World** 3DO **Battlecorps** Mega CD

Testscreen

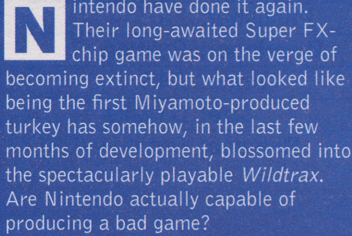
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Nintendo have done it again. Their long-awaited Super FX-chip game was on the verge of becoming extinct, but what looked like being the first Miyamoto-produced turkey has somehow, in the last few months of development, blossomed into the spectacularly playable *Wildtrax*. Are Nintendo actually capable of producing a bad game?

Two new 3DO games show that the machine is still starved of original titles: *Out Of This World* gets a makeover but remains essentially the same game, while *Dr Hauzer*, although new – and technically innovative – bears more than a passing resemblance to the seminal *Alone In The Dark*.

Finally, Bullfrog's *Theme Park* allows you to build and run your own amusement park. Complex, detailed and enthralling, this is the PC doing what it does best – *Sim City* fans will find it irresistible.



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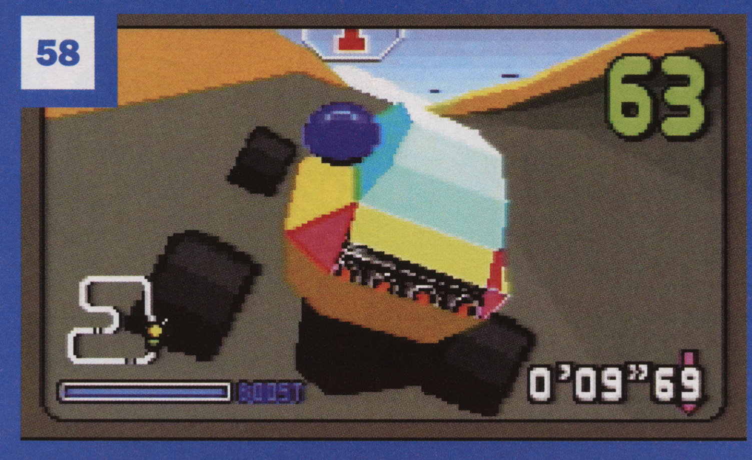
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Theme Park

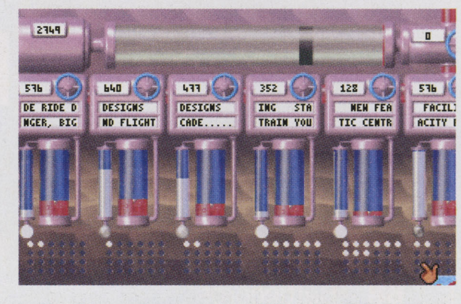
Format:	PC
Publisher:	EA
Developer:	Bullfrog
Price:	£45
Size:	6 disks
Release:	Out now (UK)

Anyone who's played *Sim City 2000* knows how engrossing running your own city is. Well, imagine how much more attractive running a theme park must be: not only do you attract paying customers eager for a minor coronary, but you can also charge them ridiculous prices for tatty kitsch and runny ice creams.

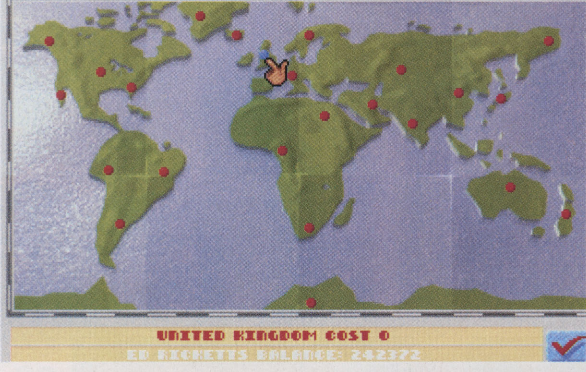
This, in a nutshell, is what *Theme Park* is about. Competing against up to ten other computer-controlled players, your task is to set up the ultimate thrill-laden park. Starting with a bare field, you lay out paths, install life-threatening rides, and build shops and fast food joints. Add a few handymen to keep the place tidy, a team of mechanics to service the rides, throw in a lake or two to make the place look nice, and you're ready to open. At this stage, the game is a delight just to look at: the rides whirl manically, each playing its own seductive tune, while the customers mill about in search of excitement.

The key to the game is pleasing these punters. Once they've sampled a couple of rides, they let you know exactly what they think by means of thought bubbles. They might be hungry, desperate for the toilet, tired of walking around or, in the worst possible case, simply bored. You need to be constantly on the look-out for disaffected folk and react accordingly.

As the game progresses and the results of your research appear, you can upgrade the initially suicidal rides to more stable versions, and eventually add state-of-the-art equipment: out goes the pedestrian merry-go-round, to be replaced with a bowel-threatening rollercoaster or racetrack. All of this costs money, of course: money to research new inventions,



The Research screen is a little simplistic, but it's the only aspect of *Theme Park* that is









Buy your land (inset) and choose your first rides (left middle). Once the initial layout is complete, it's best to check the state of each ride (bottom left), or they tend to go wrong very quickly (above)



The disgustingly disrespectful general public don't give a toss about the state of your park, so it's down to your staff to keep the place tidy – as long as they're paid decently.



Pay your workers too little for too long and, like any good British workforce, they decide that perhaps striking is preferable to working and picket the entrance to the park



So it's back to the negotiating table and some serious haggling over the biccies. If they run out before you've reached an agreement, the strike stays solid and you should start panicking

money to stock your shops, money to buy new rides, money for staff wages, money for rent... Your objective is to make your park pleasant and enjoyable enough to pull in the punters, which then enables you to turn a profit.

The amount of detail crammed into this initially simplistic game is incredible. For instance, placing an ice cream shop next to a ride increases the chances that a queasy customer will lose their lunch after a quick spin. If other similarly stuffed visitors see the vomit, they're likely to chuck up themselves, resulting in what the manual gracefully refers to as a 'chain chunder'. This can get seriously out of hand; employ more handymen to clear up the mess and they end up moaning about wages, which could lead to a strike if you don't come up with a decent settlement. And so on.

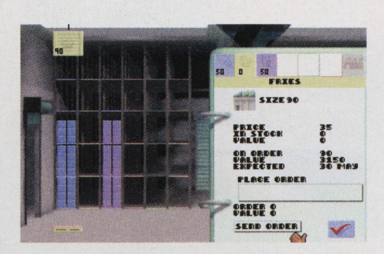
At the full simulation level you're constantly assailed with problems; the park layout itself almost becomes secondary as you grapple with orders for French fries, desperately try to make some cash on the stock market and worry about the state of your toilets. You really do need to use every ounce of concentration in this situation, because ignoring even one aspect of the way the park is run soon sends you spiralling into irrecoverable debt, leaving you no choice but to sell up and start all over again with the remaining funds – which means you lose all the research in which you've already invested.

At this level the game is perhaps a bit too complex and clever for its own good – far more so than its nearest competitor, *Sim City 2000*. There's no point at which you can sit back and watch the park tick over on its own, unless you sacrifice a lot of detail (and addictiveness) by opting for the easier sim levels. Nevertheless there's enough variety and graphical appeal to make the challenge worthwhile. But, as the manual says, just don't expect it to be a walk in the park. E

Edge rating: **Eight** out of **ten**



You could always leave the Bouncy Castle (above) alone so it explodes and wangs a couple of punters into orbit – they came for thrills, after all. Your visitors are a mixed bunch at the moment (inset)



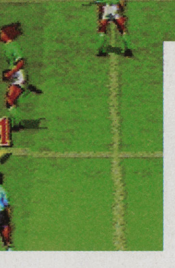
It's not all glamour running a theme park. (In fact, none of it is glamour, come to think of it.) Even mundane stuff like ordering the chips is down to you


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Ahead Of The Game

Super Sidekicks 2







The game kicks off (above). Taking a penalty is easy (top right): move the cross hairs to where you want the ball to go and then blast it



Press 'A' when the word 'Chance' appears onscreen and the view changes to give you the opportunity to shoot at goal

Format:	Neo-Geo
Publisher:	SNK
Developer:	In-house
Price:	£175
Size:	106 megabits
Release:	Out now
Supplied by:	Raven Games
Telephone:	081-663 6810

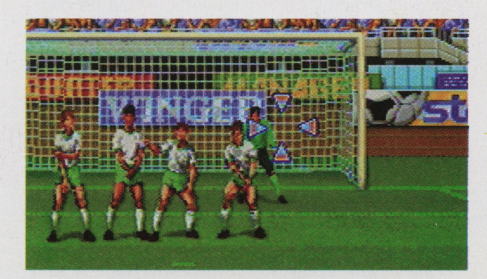
Given that SNK's first *Super Sidekicks* game was one of the least inspiring football sims ever, universally scorned because of its haphazard gameplay, it comes as a pleasant surprise to find that the sequel is actually rather good. For once, the '2' in the title is justified – this game represents a clear progression.

For a start, it looks much better than the original. The pitch scrolls around much more smoothly and the scaling is so slick that you'll hardly notice the screen zooming in and out while the players run up and down the pitch. The sprites are well animated and there are lots of neat intermission screens that help create that 'big match' atmosphere.

The crowd noise has also been improved. Gone is the irritating klaxon noise, to be replaced by clear, event-driven sampled sound. The result is that this is possibly the best-sounding sports game on the Neo-Geo: the crowd scream when there's a goal mouth scramble, taunt the opposition when their team is winning, and 'Ooh!' and 'Aah!' when a shot goes wide or is tipped over the bar.

But these cosmetic improvements wouldn't mean diddly squat if *Super Sidekicks 2* didn't play a decent game of footy. Thankfully, it does. In fact, it's by far the best arcade soccer game on any system, with a simple, intuitive control system that allows you to string several passes together with relative ease. Add to that the unique 'chance' feature that puts you in a one-on-one situation with the goalie and what you have here is a very polished and playable football game.

There are two criticisms. Firstly, the teams don't change ends at half time. Secondly, and more worryingly, it costs £175 – a ludicrously high price for any game. If it weren't for those drawbacks, *Super Sidekicks 2* would be pretty much perfect.



Free kicks are relatively easy in *Super Sidekicks 2*, thanks to the ability to add ridiculous amounts of aftertouch to the ball

Edge rating: **Eight out of ten**





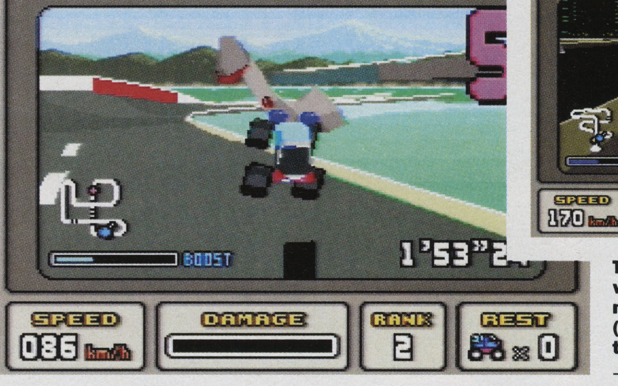




From top: a striker breaks through the defence; a shot on goal; battling for midfield supremacy; preparing for a free kick

Wildtrax

Format:	SFC
Publisher:	Nintendo
Developer:	In-house
Price:	Call (import)
Size:	8Mbits
Release:	Out now (Jap)



The jeep takes off (left), watched by a Nessie-type monster. This *StarFox* billboard (above) shows off the SFX's texture-mapping abilities

Those people who saw the jerky, slow and rather unconvincing pre-pro version of *Wildtrax* (also known as *Stunt Race FX*) at the Spring ECTS weren't expecting much from the finished game. Despite the fact that it boasted the next-generation Super FX chip (approximately 30% faster than the original one), the game looked like it was all set to be the first Nintendo dud.

But an amazing transformation has been effected since then. Nintendo have hacked away all the rough edges, and what we're left with is a slick and obscenely playable racing game. *Wildtrax* is in fact one of the most innovative and ambitious attempts at a console racing game since, well, since *Virtua Racing* on the Mega Drive. But whereas *Virtua Racing* was designed as a money-spinning coin-op and converted to the Mega Drive only after it had achieved success in the arcades, *Wildtrax* has been developed specifically for the SNES, and it shows. *Virtua Racing* suffered in its transition to the Mega Drive, but *Wildtrax* has been designed with the SNES's limitations in mind, and it's a better game as a result.

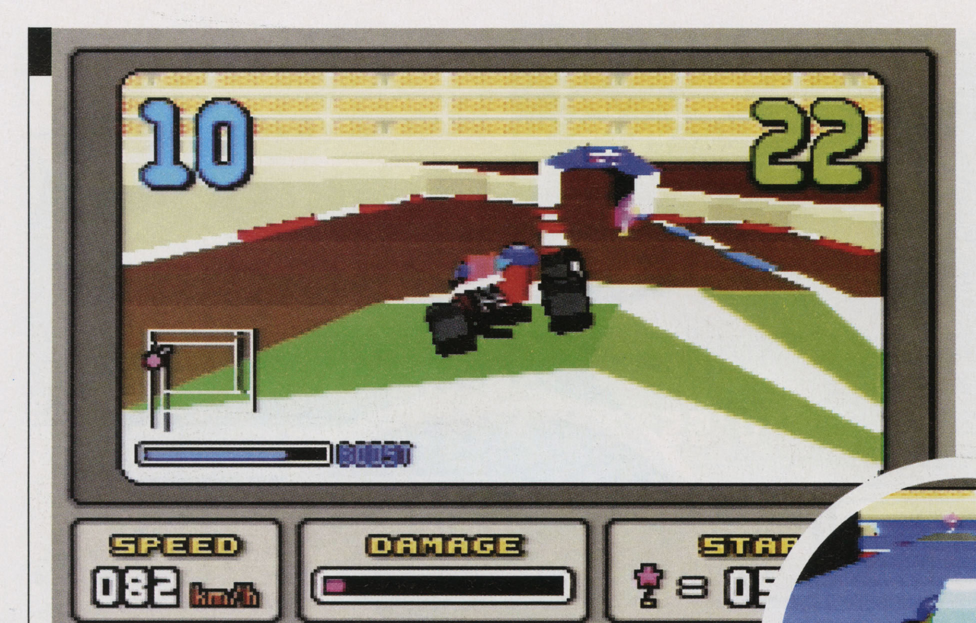
There are four different track options available: Speed Trax, Stunt Trax, Battle Trax and Practice Trax. In Speed Trax, one player races three computer-controlled cars around various courses, trying to reach checkpoints in order to qualify for the next, even more treacherous course. Choose Stunt Trax and you have to negotiate ramps, water jumps, bumpy roads and other obstacles, collecting bonus stars on the way. Battle Trax has two players racing against each other with the help of a split screen, and Practice Trax consists of, well, practice tracks.

Each of the four options offers you a choice of three vehicles: a 4WD jeep, a saloon car and a racing car. Each vehicle has its own characteristics: the jeep, for example, is slow but resilient, while the racing car is very fast but easily damaged. There are also three skill levels: Novice, Expert and Masterclass. Reach the halfway point on any one of them and you enter a bonus round; this might involve driving a lorry around a twisting obstacle course or riding a sports bike around a speed circuit.

So, as a package, *Wildtrax* scores very well – there's something here for everyone. But in terms of gameplay, it scores even higher. Just like *StarFox*, the first Super FX game, *Wildtrax* takes a while to get used to – don't expect to



One of the Masterclass tracks. Driving across mountainous terrain like this is both lots of fun and very dangerous, especially in wet conditions – it's not for novices



Collect as many stars as you can within the time limit while negotiating huge humps (above). The whole screen tilts as your car bounces around the track

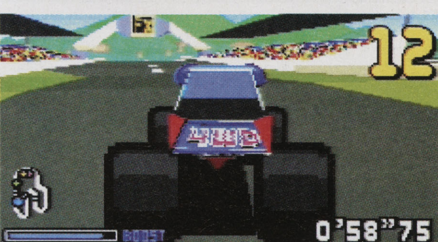
be immediately impressed. The control system seems awkward at first, but your perseverance will be rewarded: after a few hours' practice you'll be able to powerslide around a corner, ignite the 'boost' and swerve around falling boulders with relative ease. It's then that you discover what an engrossing piece of software this is.

In addition to playing well, *Wildtrax* looks fantastic. If you weren't impressed with *StarFox*'s graphics and still need to be convinced of the Super FX chip's abilities, take a look at this. The cars scale convincingly, the track moves accurately and the 3D update is impressively fast. There's also a ridiculous amount of texture mapping – much more than in *Virtua Racing*. Just like *Virtua Racing*, *Wildtrax* lets you choose from a variety of views, but the difference is that all of the views in *Wildtrax* are useful. The first view is positioned behind and slightly above the car. The second is the 'chase helicopter' view, which, unlike its *Virtua Racing* equivalent, actually allows you to see your car – you don't have to squint to make out a tiny dot on the track. And the third view will suit *Ridge Racer* aficionados down to the ground: no part of the cockpit or steering wheel is visible; all you see is a fast-moving polygon track.

If *Virtua Racing* had attitude, *Wildtrax* has personality – bucketloads of it. In classic Nintendo fashion, it's cute, but not sickeningly so. From their headlight eyes to the way they bounce and bob around the track, it's obvious that these cars have character. When you screech around a bend, parts of the car fly off and are left lagging behind, catching up again just in time for the next corner. It's all delightful stuff.

So, is there anything damning to say about *Wildtrax*? Well, unfortunately, yes. Firstly, it's not as good for two players as it could have been. The screen update is noticeably slower in twoplayer mode and the splitscreen play







The top view gives *Wildtrax* that 'sim' feel; the middle one is useful for overtaking; the bottom one lets you see more of the track

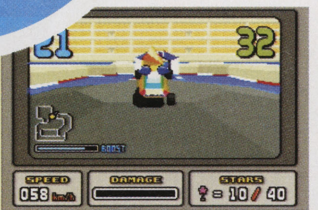
Tracks

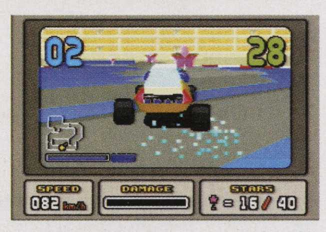
Whatever track option you select in *Wildtrax*, you're guaranteed a thrill-packed experience.

The Stunt Trax option provides the ultimate test of your driving abilities, and includes the Water Trax and the aptly named Up 'n' Down Trax.

Selecting Speed Trax lets you take on the computer-controlled cars, with your aim being to reach the final race. The time limits are tight and the only thing that really matters is speed.

Battle Trax is a good twoplayer option, while Practice Trax allows you to take whatever vehicle you like for a spin on any of the tracks.





Stamp on the brake, hold down the 'boost' and your car performs a wheelie (top). Try and pick up all 40 of these stars (above)

Continued next page

testscreen



The barriers don't stop you falling off the bridge (above). The saloon car (far right), demonstrating its elasticity

Caution required: avalanches are common on this level (top right). In its rush to reach the checkpoint, the saloon car has spun (above)

Continued

area is too small. The sad fact is that although the Super FX chip can cope perfectly well in oneplayer mode, it simply isn't up to shifting all those polygons twice over. It's just a bit disappointing, considering the breathtaking brilliance of the rest of the game, that *Wildtrax* couldn't match the excellent twoplayer mode of the non-SFX *Super Mario Kart.* Oh, and although the sound effects in *Wildtrax* are wonderful – the revving engines are particularly impressive – the typically Nintendo music is a little too cutesy for most people's liking.

But that's about it. Apart from those minor deficiencies, *Wildtrax* is a fun and polished product. *Virtua Racing* was a great twoplayer game, but suffered from a restrictive oneplayer mode – if you crashed, you had to wait while your car span round and then came to a stop before you could continue racing. In *Wildtrax*, however, you don't really crash; you just bounce off the scenery and keep racing, and it's this non-stop action that makes the game so entertaining.

In short, *Wildtrax* offers a brilliantly varied menu for one player, and plays well enough in twoplayer mode to make it one of the best racing games currently available for any home system.

Edge rating: **Nine** out of **ten**





Although *Wildtrax* is essentially a oneplayer game, Nintendo have included a twoplayer battle option. The screen shrinks to less than half its normal size and the update becomes a little slower, but it's still competitive stuff (if not quite up to the standard of the rest of the game)

Bonus level

From top: your vehicle is loaded into an artic before the first bonus level; controlling this huge truck is difficult; on the third level, you get to ride a motorbike; the motorbike again, seen from above

Doctor Hauzer

Format:	3DO
Publisher:	Panasonic
Developer:	Riverhill Soft
Price:	£60 (import)
Size:	1 CD
Release:	Out now (Jap)





When you enter a room, it's a good idea to search every object – even paintings (top). A huge hole stands between you and the next section of the house (above). Or does it?



Doctor Hauzer's mansion is full of traps. This thirdperson perspective gives the game a distinct *Alone In the Dark* quality, but it's not much use for judging jumps across gaps

Readers of **Edge** will be only too aware of the questionable quality of much of the 3DO's software catalogue. But now, with games like *The Horde, John Madden Football* and *Super Wing Commander* finding favour, the pendulum finally seems to be swinging Trip Hawkins' way.

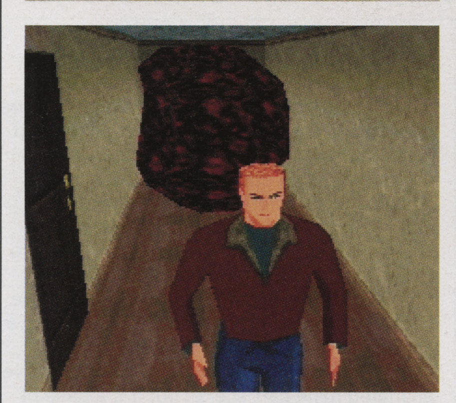
At first, *Doctor Hauzer* – one of the first Japanese-sourced games for the format – seems to be cast in the same mould. It may bear more than a passing resemblance to *Alone In The Dark* on the PC, but, given the excellence of Infogrames' groundbreaking game, that's not necessarily a bad thing.

The game takes place in a huge mansion perched high on a cliff overlooking the ocean. You play a detective who's been sent to investigate the mysterious disappearance of a famous archaeologist. The trouble is that someone – or something – doesn't like the idea of you snooping around and has littered the house with traps and puzzles.

Whereas Infogrames' game used polygons to make up the main characters and create lifelike animations, Riverhill have gone one giant leap further and constructed the entire game environment the same way, with all the rooms made out of superbly detailed texture-mapped polygons.

The main advantage of this is that it allows a variety of perspectives to be offered. *AITD*'s biggest problem was that the flip 'camera' system didn't provide much in the way of visual versatility – you'd often find areas of a room where your character was obscured by objects or furniture, and the view couldn't be altered in any way. Happily, *Doctor Hauzer* doesn't suffer from such a limitation. You can choose from three different views: firstperson





Blast your way into the next room (top). Try to stay one step ahead of that boulder (above)



These deadly axes swing to and fro as our hero attempts to reach that chest at the back of the room

(through the eyes of the game's hero), thirdperson (the conventional 'cinematic' view, where you see the character in the scene), and overhead. Although at first these options seem little more than cosmetic, you soon find that they are essential. For example, it's much easier to search objects using the firstperson perspective, and safer to jump gaps while using the overhead view. The thirdperson view offers an adequate combination of the two.

Sadly, there's a downside to all this graphical splendour: speed. There's a distinct lack of it when you enter a room full of objects or a corridor with lots of doorways – especially when you choose the overhead view. But *Doctor Hauzer* is a slow-paced game anyway. There's no-one to fight and not much to run from; it's just a case of going from room to room solving puzzles.

The puzzles in question range from the blatantly obvious to the incredibly obscure. One requires you to work out how to get across a gaping hole in the floor, while the next has you scratching your head trying to figure out how to move a piece of furniture to a certain part of a room, thereby opening a hidden door concealed behind a painting in another room. But thankfully, no matter how difficult a puzzle is, you're always able to work it out eventually.

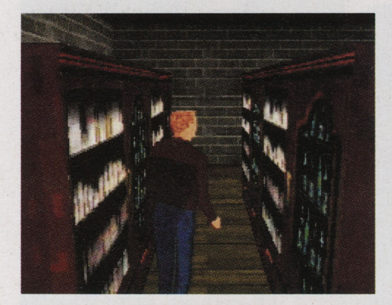
Doctor Hauzer's gameplay has a simple, linear structure, designed to allow you access to relevant sections of the house that will provide you with the solution to your next problem. You realise early on in the game that you wouldn't have been 'allowed' into a room if it didn't offer a solution to a problem

Pick-ups

Getting through Doctor Hauzer's mansion is not an easy task. However, during your visit you can pick up various items. Although some of them don't seem particularly important to begin with, most offer a solution to a problem somewhere in the house. Take the candlestick and lighter, for instance: in a later part of the game you come to a very dark passage; the only way to get down it safely is by lighting the candlestick with the lighter (above). The function of items like a gun or an oil can are less obvious, but a bit of lateral thinking will usually (but not always) unearth a use for them.

Continued next page







Views

Use the firstperson view (top) to search for objects. The thirdperson (middle) and overhead (bottom) views show more of the room at one time



This track leads to a mine cart. But where does it go? It's time to go exploring (minus hat and whip)



Avoid these fireballs (middle). Is that the elusive Dr Hauzer (above)? Could our intrepid detective have reached the end of his quest?

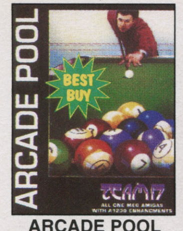
elsewhere in the house, and this knowledge gives you the determination to persist until you discover something of value. There are a few occasions when a door leads to a bottomless pit or a flooding room, but that doesn't happen very often.

One of the major criticisms levelled at *Alone In The Dark* was that it was too small. Sadly, *Doctor Hauzer* suffers from the same 'good while it lasts' syndrome: working out the puzzles and making progress is good fun and generally rewarding, but the game simply doesn't last long enough. In fact, it's easily possible to complete it within a few hours' play – even in its native, Japanese-text form. The seven 'save game' positions are partly to blame for this (but having to play the game from the start every time you died would have been even more of a drawback). Riverhill have attempted to add some spice to the later stages of the game by including an impressive animated mine cart scene, but it's a case of too little, too late.

It's a shame Riverhill couldn't have given *Doctor Hauzer* a little more depth. The game looks fantastic (even if the 3D update is a little jerky) and it sounds even better – from the familiar-sounding intro tune to the actual ingame score, *Doctor Hauzer* is a musical delight. But there just isn't enough here, gameplay-wise, to satisfy the appetites of most players. If there had been other characters to interact with (or maybe fight against), or simply a bigger house to explore, then *Doctor Hauzer* would have been an essential purchase. As it is, it's a polished and slick game that is well worth a look, but don't expect it to be sitting inside your 3DO for long. E

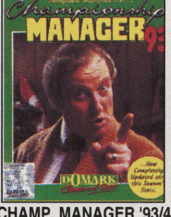
Edge rating: **Seven** out of **ten**

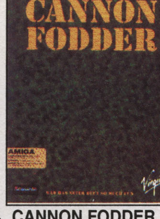
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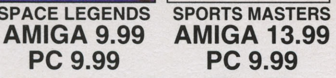












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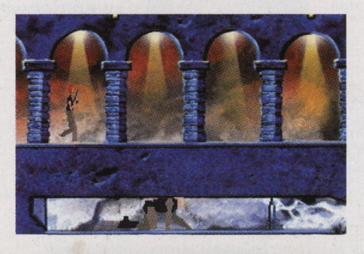
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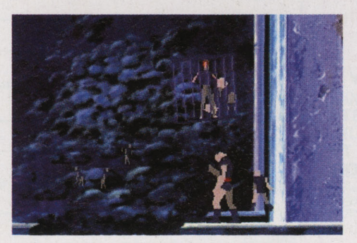
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Out Of This World

Format:	3DO
Publisher:	Interplay
Developer:	In-house
Price:	£55
Size:	1 CD
Release:	Out now (US)
Supplied by:	Raven Games 081-663 6810







Your companion takes one route, while you take the other (top). Trapped (middle)? There's a way out: if you swing the cage, the force snaps the cord, the cage drops, and you're free (bottom)

When *Out Of This World* was originally released on the Amiga in 1991, it caused a sensation. French development team Delphine Software took a simple side-on flip-screen platform adventure, introduced revolutionary polygon animation, cinematic cut scenes and intricate puzzles, and produced the most advanced platformer of its time. But that was three years ago. In the meantime, *OOTW* has turned up on a wide variety of formats, and its appearance on the 3DO is unlikely to have the same impact as the original.

The plot of the 3DO game is the same as the original: after a scientific experiment goes wrong, you find yourself stranded on an alien planet, from which you have to find your way home. Admittedly, *OOTW*'s story was never its strong point, but what made up for its sketchy scenario was its superb playability, and in this respect, too, 3DO *OOTW* is no different to its predecessors.

Although the game employs the now familiar 'trial and error' arcade puzzle system, a lot of skill is still required to get through it. In fact, your progress is likely to be hindered by a lack of digital dexterity rather than shortcomings in your lateral thinking abilities. And progress is what you want to make, because *OOTW* is the kind of game you can't stop playing.

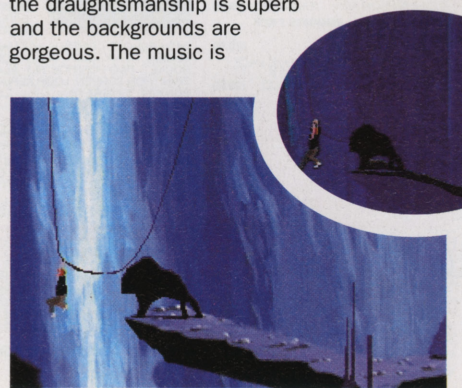
Aesthetically, this is the best version yet: the draughtsmanship is superb and the backgrounds are gorgeous. The music is excellent, too, making a crucial contribution to the game's atmosphere. But it's a pity the ingame characters weren't given a facelift; although they move well, they tend to look drab against such vibrant backdrops.

But the main failing of 3DO *OOTW*, like every other version, is that it's over too soon. It's basically a victim of its own success – its addictive nature means you keep playing until you finish it. Interplay could have used the 3DO conversion as an opportunity to expand the game, but they missed their chance. The result is that, apart from the aesthetic improvements, there's nothing new here; it's just the same game in a different package. Which is no bad thing, but most of us have seen it all before.





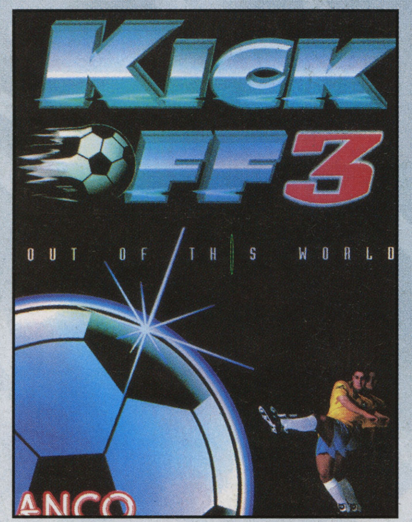
Sometimes our hero can interact with those impressive backdrops (top). Speed is crucial here (above), as you try to dodge the boulders



SNES *OOTW* (inset) looks good, but the 3DO's extra colours really make a difference (main)

Edge rating: **Six** out of **ten**





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THEME PARK - IBM/AMIGA/MAC

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"A cracker..What more could a person want..."

82% SNES FORCE

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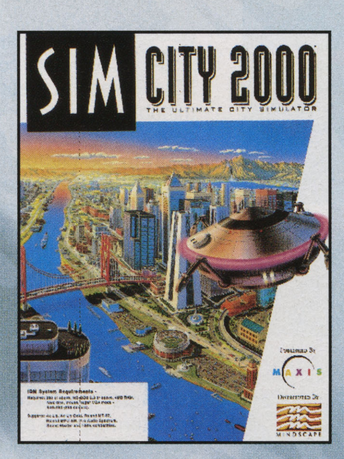


ELFMANIA - AMIGA

Elfmania is a Beat'Em Up set in fantasy world and is the first game of its type that will give Amiga owners the chance to enjoy 21 megabits of high quality graphics at a rate of 50 frames a second!

"This is the closest an Amiga owner is going to get to owning a high-spec arcade machine."

91% The ONE



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Battlecorps

Format:	Mega CD
Publisher:	Core Design
Developer:	In-house
Price:	£50
Size:	1 CD
Release:	July



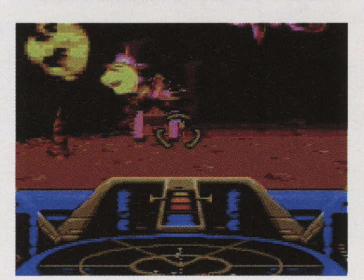
Your BAM comes fully tooled up, ready to cause spectacular explosions like this (above). Keep that red arrow pointing up to reach your target



In the final level you come to face to face with the MOSES computer itself. It's well protected, so it's best to work on its defence systems first







An enemy BAM (top). Take out that tower (middle) with heat-seeking missiles. Avoiding enemy fire (bottom) is no easy task

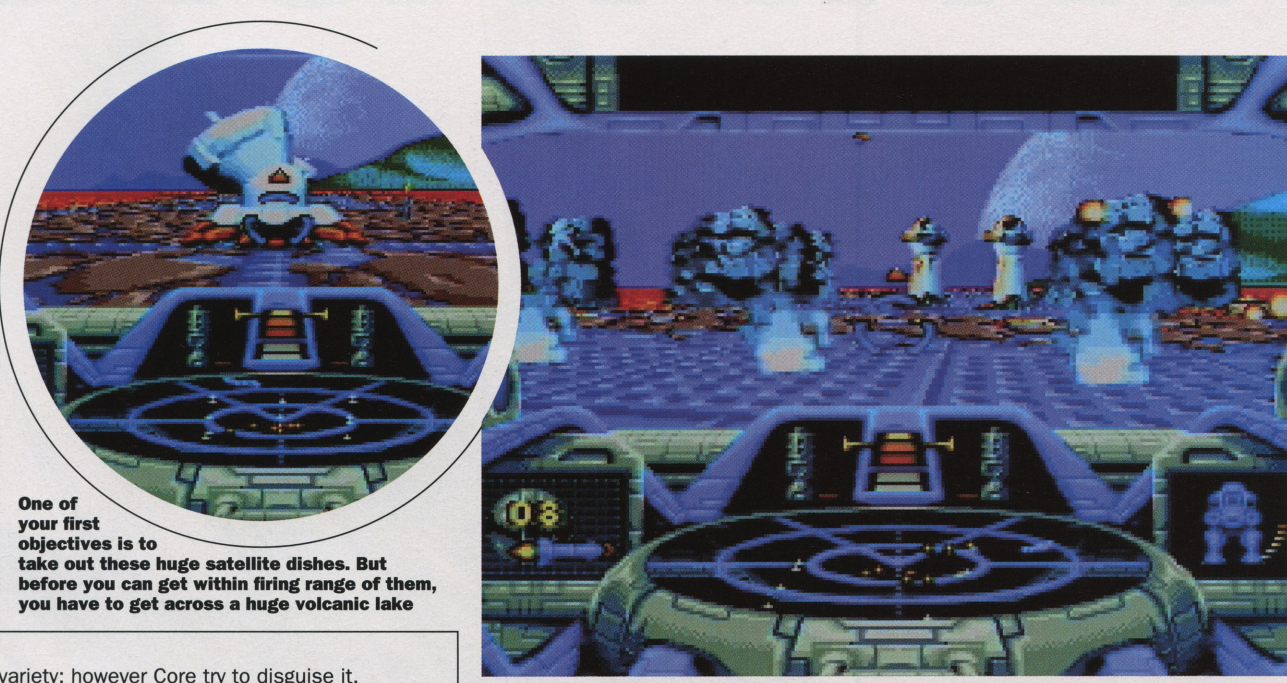
Core Design seem to have got the Mega CD market cornered these days. That doesn't mean that their games are all mindblowingly good; they're not. But no other developer has devoted as much time and effort to the platform as Core have.

Their latest game, *Battlecorps*, takes place eight light years away from Earth, on a planet colony called Mandelbrot, whose inhabitants make a living from mining, using the latest excavation and defence robots, the Battlebots. But when the colony's bio-computerised operating system, known as MOSES, is infected with a virus by a saboteur from a rival mining company, it turns on the colonists, imprisoning them and effectively transforming the planet into a war zone. As a member of the highly trained Battlecorps, you take control of a Bipedal Attack Machine (BAM) and set off to reconquer the planet.

First impressions of *Battlecorps* are favourable. The game starts with a briefing from your commander, Calgary. Some jazzy rock music fades in, and then the scene dissolves to the cockpit of your BAM, where you find yourself looking out through the windscreen at Mandelbrot. Very polished.

Each of the 13 missions requires you to 'stomp' (the screen shudders with each step) around the planet's surface and complete an objective – destroying a generator or finding a hidden teleport that will allow you access to another part of the level. Your ultimate aim is to find and destroy the evil computer, MOSES.

All very good in theory, but not in practice. The missions simply don't offer enough



One of your first objectives is to take out these huge satellite dishes. But before you can get within firing range of them, you have to get across a huge volcanic lake

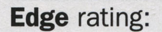
Battlecorps **is full of nice visual effects. Here, columns of steam rise through holes in the ground on the approach to two deadly missile-firing towers (visible in the background)**

variety; however Core try to disguise it, *Battlecorps* is nothing more than a basic blaster. You walk around, blast a baddy, find a switch, blast that, walk on a bit further, take out a tower, and so on until you reach the end of the mission. Now, this may sound like heaven to some shoot 'em up fans, but sadly, the action gets very tedious very soon; even the most avid blast 'em up freaks will soon find *Battlecorps'* repetitive nature a big turn off. It's as if the programmers were caught in a dilemma: they wanted *Battlecorps* to be a strategic, mission-based shoot 'em up, but were too afraid to follow their idea through and so chucked in lots of 'safe' shooting bits.

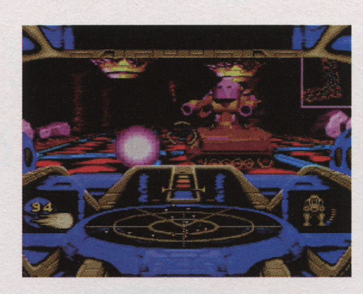
However, if games were judged purely on their technical accomplishment, *Battlecorps* would score very highly indeed. Graphically, it's fabulous. Once again, Core have managed to show off the Mega CD's hardware scaling capabilities. Although it employs the same techniques used in *Thunderhawk*, *Battlecorps'* extra colours – 64 instead of 16 – make a big difference. The sprites and scenery move smoothly and convincingly, and there are even a few texture-mapped buildings thrown in for good measure.

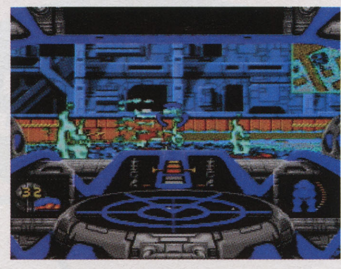
Neat visual touches abound. Fire a homing missile at an enemy BAM and you're treated to a vibrant explosion, with twisted bits of metal falling to the ground. When you blast a boulder, it explodes into hundreds of tiny particles. Some of the levels take place underwater and include an authentic shimmering, watery effect.

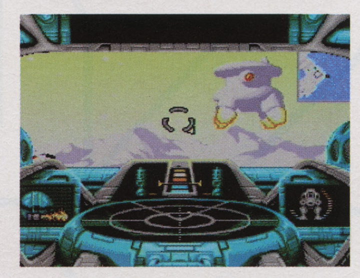
But it has to be said that *Battlecorps* doesn't play as well as it looks. The painful truth is that it's boring. It could quite easily have been the best game on the Mega CD – that honour still belongs to *Thunderhawk* – but sadly, it falls short of the mark. Core must be commended for attempting to give the flagging shoot 'em up genre a much-needed boost, but it's a shame they didn't inject some new ideas into the gameplay.



Edge rating: **Six** out of **ten**

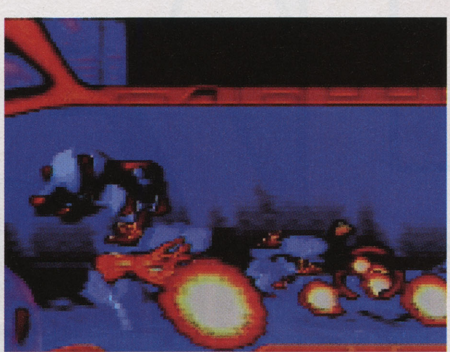






An enemy BAM closes in (top). A teleport (middle). This chameleon-like alien (bottom) can prove a tricky adversary





This nice underwater effect (left), with the screen shimmering and bubbles rising to the surface, can be found on one of the middle levels. This centipede (right) is vicious, fast and hard to kill


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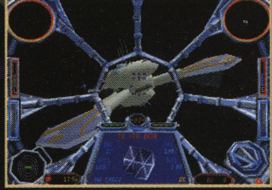
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viewpoint

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Informed opinions and intelligent debate about the world of interactive entertainment

In the 'Leading Edge Hardware' supplement that came with the May issue of your excellent magazine, you seem to have lost much of your optimism about the 3DO. You seem to prefer the Saturn, Sony PS-X and Project Reality because of their superior technical specifications. There are much more important advantages of the 3DO platform I feel you forgot to mention in an otherwise very good supplement.

First and foremost, the 3DO is a scalable, hardware-abstracted standard. That means new 3DOs can, and most probably will, be released that are as good or even better than their competitors. Your old 3DO games will be fully compatible with your new 3DO and take advantage of its superior hardware. The translation layer that is used to make all this possible requires very little overhead but it may be the reason the first generation of 3DOs don't live up to bloated expectations.

Trip Hawkins presents Sega and Nintendo with excellent competition; the royalties software developers have to pay 3DO are as little as a tenth of those demanded by Sega and Nintendo, and Trip isn't censoring every piece of software that is even mildly controversial – like Nintendo does. If the 3DO is a success it will force Sega and Nintendo to be less greedy. I will buy one of Trip Hawkins' machines just to see that happen.

Serge Diekstra, Leiden, Holland

We would be lying if we said that **Edge** hasn't been disappointed by 3DO's performance, both technically and commercially. The hardware already looks underspecced, and although 3DO's engineers may be busy on the next generation of 3DO technology, Sega and Sony seem to have really 'put the stake way out there', to quote Trip H.



Could 3DO turn out to be the format of the future? Serge Diekstra fancies its chances

From reading your excellent magazine, it seems to me that **Edge** currently favours the future of the Sony PS-X over the other competing next-generation systems. Okay, so it's very powerful, it's backed by a big company, and Namco are supporting it. Great, but weren't Sony the company that invented the Betamax video system and DAT tape standard? These two products failed to catch on, and they were both in Sony's biggest markets. I can't see Sony's 32bit powerhouse catching on when they're up against specialists in the games industry like Sega, Nintendo and Atari.

Jefferson Humber, Isle of Wight

True, Sony lost out to VHS, and DAT may not have caught on (yet), but you better believe it when we say Sony's PlayStation is in a different league. And remember, Betamax only failed because other companies had already jumped on JVC's VHS bandwagon – Betamax was technically superior to the VHS tape system.

Videogaming has never relied upon the acceptance of a global standard, and tape standards are hardly a fair comparison. With the PlayStation, Sony seem to be doing everything right.



Will Sony's PlayStation, unveiled recently in Japan, suffer the same fate as the Betamax system? (See letter from Jefferson Humber)

Despite being an Amiga 1200 owner, I am becoming increasingly angered by the one-sided and narrow-minded views of Amiga-owning **Edge** readers [Letters, **Edge** 9]. The Amiga is a fantastic computer – no-one is disputing that. The Video Toaster is a great device and *PageStream 3* is an excellent DTP package, but, as **Edge** has explained, they are not widely used professionally. If people feel compelled to write in about the Amiga, they must at least concede that the machine isn't at the leading edge of videogame technology. Which is **Edge**'s primary remit, after all.

Richard Downs, Worthing

The Amiga is a fine machine but it can't be denied that it does not represent the state of the art as far as computers or videogames are concerned. Perhaps Commodore's new RISC-based machine will put them back at the leading edge.

I just came across **Edge** 6 and I was very surprised when I read the review of *Alone In The Dark 2*. You state that 'some of the staff from top French development house Delphine defected to Infogrames.' The opposite would be closer to reality.

Actually, most of the team who made the original *Alone In The Dark*, plus some other people at Infogrames, defected to form a new team called Adeline Software as part of Delphine. As far as *AITD2* is concerned, this means that most of the original team played only a small role in its development. The Adeline team is currently working on a new 3D game that should be out at the end of '94.

Being part of the Adeline team (but in Surrey to complete an MSc while writing the sound engine of our new game), I thought you might be interested in knowing the true story.

Apart from that little detail, all the people at Adeline and myself agree that your magazine is 'splendid'. Keep it that way!

Serge Plagnol, Guildford

Edge stands corrected.





Most of the original *AITD* team left Infogrames to join rival Delphine Software and played no part in the sequel (see Serge Plagnol's letter)

Obviously, it's a very enticing idea, but systems that can program every machine by using a common language still have a long way to go [see *Taos* story, **Edge** 9]. Here are a few points.

What is the point of Sega, etc creating 50MIPS machines if we use languages that slow them down to 10-20MIPS? I know that still sounds fast, but running a 3D game can take up a lot of processor time.

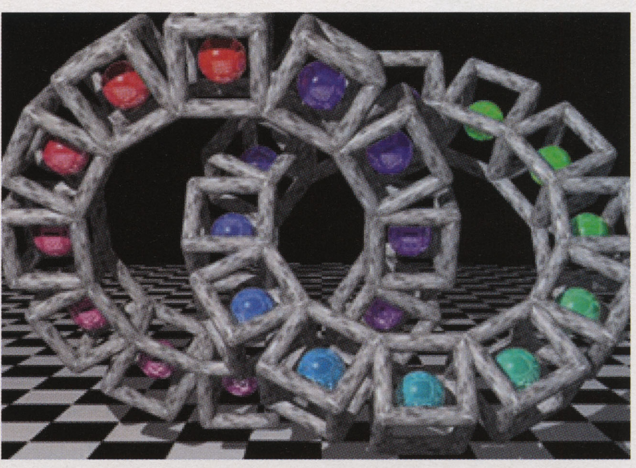
When I design a game I try to use the machine's specialised silicon to push the machine and the game to their limits. Such games do not transfer well to other hardware (seen any Mode 7 games on the Mega Drive?). If a game is converted, it is likely to need the speed of pure machine code to overcome the deficiency of unsuitable hardware.

I like using machine code. I can program quicker in code than any other language I have ever come across. All of the other languages just get in my way and my routines become ugly. I know many games programmers at the top of the industry who feel the same way (3DO take note: we don't want to program in C!).

Jon Ritman (programmer of *Head Over Heels* and *Monster Max*), London

At this point, **Edge** hands over to Tim Moore, a co-director of Tao Systems...

Tao Systems have compilers that can produce VP [virtual processor] code (portable at the binary level) which, when translated on the PC, runs quicker than code compiled on DOS compilers. However, the two technical directors of Tao Systems are both ex-games programmers, and none of the games we wrote used high-level languages. We wrote games in assembler because you can tailor your code for speed or size according to need. We recognise that this is the belief of many games programmers.



***Taos* promises an end to hardware incompatibility and obsolescence (see Edge 9). But veteran programmer Jon Ritman isn't convinced**

Taos has been written with efficiency in mind. The VP model was chosen carefully to encapsulate the concepts common to all microprocessors. VP assembler has operations such as arithmetic, copy (to and from effective addresses) and flow control (jumps and conditional jumps, subroutine calls, etc). Programming is just like writing in assembly language.

Most microprocessors have their own instruction for implementing each VP operation and hence no loss of efficiency will occur. The potential for inefficiency arises when the VP model does not match the native capability – eg chips with many more or many less than 16 registers. However, the conversion to native code is performed by a program (known as a translator) which can act intelligently, eg tables can be built for commonly used constants.

We are not arrogant enough to believe that VP code will always execute as fast as something an expert human could produce. But when I was writing fast action arcade style games, I found that the code broke down into two categories.
a) Core graphics routines such as the 'draw the background' routine or the 'sprite' routine.
b) Game control logic such as what happens when you press 'up', how many frames to animate when the man falls, what happens when you pick up an object etc.

I found that routines in category a) tended to take around 10% of the coding time but occupy 90% of the processor time when the game was running. Routines in category b) would take 90% of the project time to write but occupy only 10% of the processor time.

We believe VP code will always be at least 90% as fast as native code for orthodox programs. Consequently, by applying this to the code in category b) you can save 90% of your project time for a 1% (10% of 10%) speed penalty. Even a system which was only 50% efficient would result in a 5% speed penalty.

This is why we have seen the transition to commercial games largely written in C, with core routines in assembler – *Doom* is a good example. Also, modern processors with caches will often execute a routine from the cache so fast that they are limited by external memory bandwidth. In this case a more compact routine will not execute any quicker. *Taos* allows any routine to be coded in VP assembler or native assembler; programs can consist of both, coexisting legally. When provided with native routines, *Taos* selects the one needed for

Continued next page

viewpoint


Tim Moore (middle) defends *Taos*, the operating system he helped create (see below)

Continued

the specific hardware it is running on.

Mr Ritman is an expert programmer but not everyone is. *Taos* allows a programmer to become competent for all supported chips and also provides a consistent environment – eg on the PC you don't have to worry about EMS or XMS or video page flipping.

Finally, if my reply is still unconvincing, Tao Systems would be delighted to challenge Mr Ritman's comments in person with a demonstration.

Tim Moore, joint technical director, Tao Systems Ltd

(More information can be obtained from the TAOS conference on CIX)

I've just read the little booklet given away with **Edge** 8. Usually, bits of cardboard attached to mags are a pathetic attempt to wangle a little extra shelf space in the newsagents. I should have realised that you were above such jiggery-pokery.

But although I read it with much relish, I found no mention of LaserActive. Does this mean that LA has ceased to exist? If not, can you answer some questions which I'm sure you would normally have answered in the booklet, had you seen fit to include the machine.

I assume the machine plays Mega LDs and LD-ROM^2 in addition to the regular MD and PC Engine software. Is there any likelihood of other formats being added – like CD-ROM or 3DO? Will the machines play arcade LaserDiscs? Will they play analogue LaserDiscs? And do you have any release dates of prices for the machine yet?

Deke Roberts, Oxford

LaserActive has not ceased to exist, but it is a rare beast – even in Japan. The chances of it being released over here in any numbers are slim, so the chances of further formats being added to its hardware stable are approaching zero.

Arcade LaserDiscs, like *Mad Dog McCree* or *Space Ace*, won't work on LaserActive because the arcade systems use dedicated hardware.



Has Pioneer's LaserActive system already gone to the great scrapheap in the sky? (See letter from Deke Roberts)

In **Edge** 9 you said that you did not cover the Amiga because 'it is not widespread'. Oh really? If you only cover widespread machines, why do you review the elusive Jaguar and the unavailable 3DO? The A1200 has sold over 200,000 units, compared to (as you said yourself) only 10,000 3DOs. Explain!

SB, London

The A1200 may be more widespread, but until more AGA-specific software arrives, its coverage will remain limited. **Edge** is mainly interested in new technology receiving original software development; hence its emphasis on more exotic and exciting formats.

Despite rumours to the contrary, Nintendo are not a dying company, and have had a few good titles to promote over the last few years. Yet they seem to rely so much on vapourware.

At the Winter CES in January 1992, Sega first announced their plans for their Mega CD. Only three days later, Nintendo announced their plans for a SNES CD, which of course would have a faster processor and be sold at a cheaper price. Nintendo also announced which titles were being worked on and claimed thirdparty support.

Six months later, at the Summer CES, while Sega were showing their finished CD unit to developers, Nintendo announced their plans for a 32bit unit. Once again, this had system specs, basic chip designs, promises of thirdparty support and titles in the works, etc.

A little over two months later, and days before Sega officially started their production of the Mega CD, Nintendo struck again with another invisible product. This time, they announced that they had teamed up with Sony to create an international standard for CD-ROM technology. A deal which quickly fizzled out and led to Sony developing the PS-X.

Now it seems to be happening again with 'Project Reality', announced as the 3DO and Jaguar were nearing release. All anyone has seen of it is fancy demos on SGI's Onyx^2 system. If you want technical info, you have two choices: go to Nintendo and get fanciful statements like, 'it will be four times more powerful than the PS-X and eight times more powerful than the Saturn'; or go to SGI and get info which seems to contradict everything Nintendo are saying.



Nintendo's Kyoto HQ: centre of a vast videogames empire and – according to David Oldridge – the source of much corporate hot air

To top it off, Nintendo recently printed a two-page ad in an American magazine which criticised Sega for being 'full of hot air'. This ad had its own supply of hot air, though: it exaggerated the speed of the SNES and stated that the machine could zoom with no loss of detail, etc.

Nintendo have a lot going for them with the SNES. They could be promoting what they have, instead of what they don't have. That is what is discouraging me from buying Nintendo.

David Oldridge, Ontario, Canada

There does seem to be an air of confusion surrounding Nintendo, with new products like the ever-so-useful Game Boy adaptor for the SNES, the 32bit 'VR' system and, of course, Project Reality.

Having said that, Nintendo never cease to amaze: just when

you think they've disappeared forever, they come back with a stunning product. Let's just hope they don't wait too long this time.

Having read Daniel White's letter in **Edge** 9, I feel compelled to make a few corrections.

The Toaster-powered A4000-040 is a powerful set-up, and it serves its purposes excellently, but at $10,000 it is actually an expensive option compared to some SGI hardware. A mid-spec Indy (complete with Indycam, 14" hi-res monitor and 1Gb hard disk) is cheaper than a Toaster-powered Amiga – especially when those $10,000 don't get you a hard disk. As usual, one more person equates Silicon Graphics with $100,000, yet these prices only apply to the real beasts like the Onyx Engine².

Mr White also claims that the A4000 is more powerful than SGI hardware. This is just not true. The A4000 may have a system clearing capacity of about 600MIPS, but the CPU is more in the region of 60. Compare this to the Indy's CPU, the R4000, clocked at 100MIPS.

Also claimed is that *Real 3D 2* version 2.40 is more powerful than products for SGI hardware. This simply isn't the case, and the reason that publishers use the SGI set-up is that the graphics software lends itself to games. For example, the latest version of *PowerAnimator* from Alias doesn't just give a pixel an x and a y co-ordinate; it also allows a z (depth) reference to be set.

I also challenge Mr White's definition of 'streamlined'. According to my dictionary, to streamline something is to make it more efficient and better organised, or to simplify it. Any seasoned computer user will tell you that none of the above could be applied to *Workbench*. (In fact, the best GUI has to be *RISC-OS 3* for the Archimedes.)

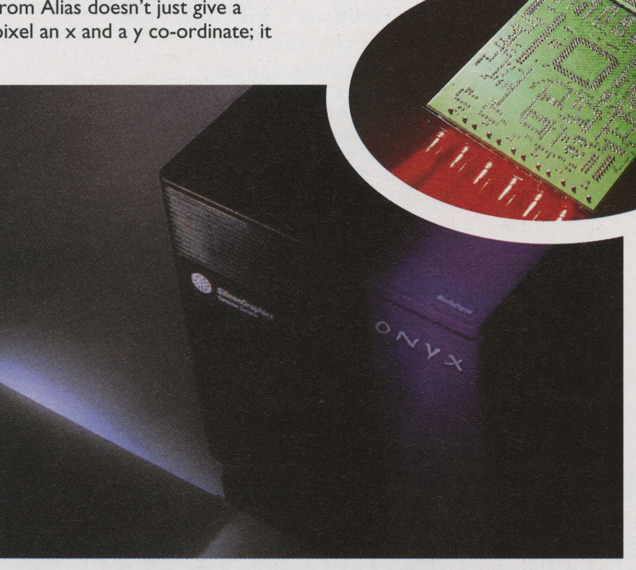
On a different note, I generally agree that the quality of computer music is much poorer than in the '80s. But there was also a lot of crap in the '80s – anyone remember that jovial, pain-in-the-arse tune for *Dizzy*? On the other hand, there have been some absolute stonkers for the 16bit consoles – *Flashback*, for example.

I have to admit being saddened by the fact that Acorn aren't going to put any heavy marketing behind the RISC PC. It is that rare example of a machine which deserves to do well, and it has some of the best hardware design ever seen. On that level alone it could certainly rival SGI hardware. It is a success looking for somewhere to happen.

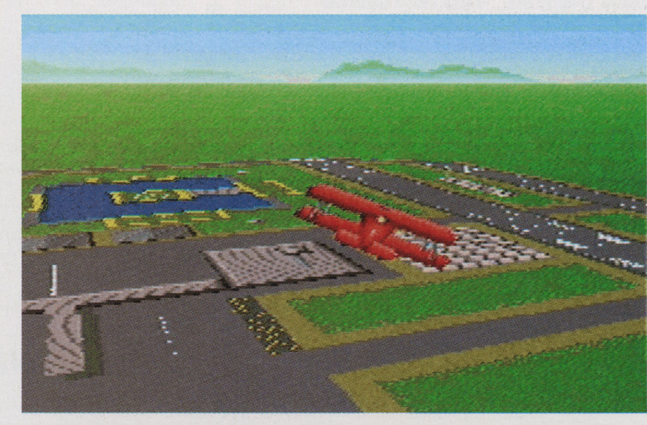
Grant Taylor, Rosyth

Okay, so we're agreed that both Newtek's Video Toaster and Silicon Graphics workstations are powerful pieces of kit. But at the end of the day it's what you do with it that counts: Jurassic Park and Babylon 5 are fine examples of the images that can be generated with both set-ups.

The RISC PC looks likely to become yet another example of British innovation failing due to lack of vision.



Daniel White (Edge 9) reckoned the Video Toaster (inset) was more than a match for SGI gear (above). Grant Taylor says there's no contest



Why aren't there any revolutionary games like the Super Famicom's *Pilotwings* to fly the flag for CD³²? (See letter from F Bannon)

Your response to Alex Rosen's letter in **Edge** 10 has got me sufficiently annoyed to write to you regarding a major flaw in your otherwise excellent journal. Mr Rosen, a CD³² owner, was upset by your hardware review of the machine. You replied that the review reflected the machine's shortcomings compared to other systems, and that **Edge** gets to see the best hardware and software in the world.

There, indeed, is the rub. The vast majority of your readers have not been offered (and will not be offered for the foreseeable future) such hardware.

Saturn and PS-X may look good in stage-managed demonstrations, or may receive favourable reviews from people paid to develop for them, but, frankly, their reality is questionable as far as your readers are concerned. Try to remember that the CD³² will have allowed gamers access to affordable 32bit CD-ROM games for a full year before Jaguar or 3DO are likely to come out officially in the UK, and probably at least two years before Saturn and Sony. Yet you are dismissive of the CD³², because availability to actually play games on a piece of hardware now, rather than at some ill-defined time in the future, seems to be given little consideration in your reviews, even though it is quite possibly the most important criterion.

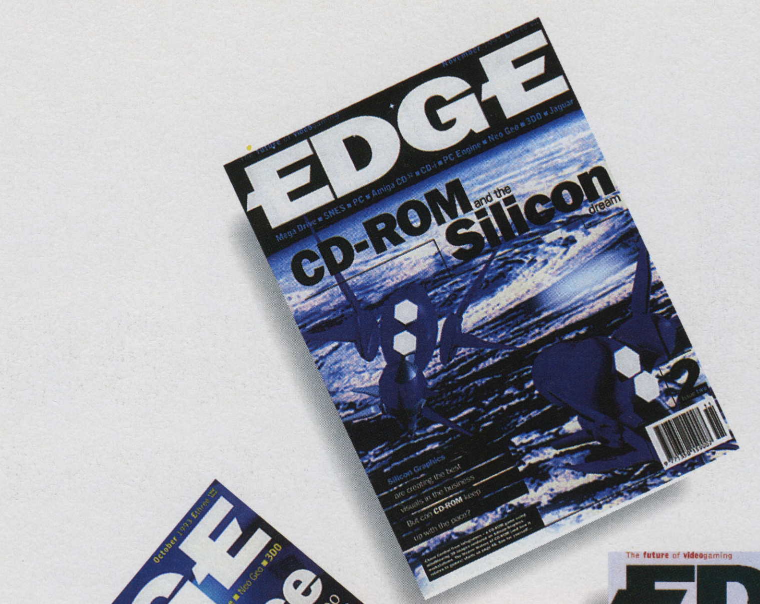
The more general problem, as far as Edge is concerned, is that by the time the super-duper machines actually arrive in the UK (1996, anyone?) you will be writing them off in your reviews because the following generation will be just over the horizon. In effect, you will be locked into a pattern of perpetually discouraging your readers from buying the equipment actually available at any given time.

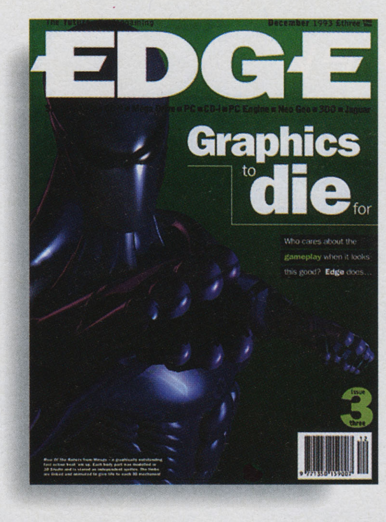
I don't suggest that you stop covering these new developments; just bear in mind that your readers do not always have the access you do. We want to play the best stuff we can *now* – now is *always* here.

F Bannon, Glasgow

The main reason **Edge** has already lost some enthusiasm for new systems like 3DO, Jaguar and CD³² is not just because of the anticipation surrounding new systems; it's more to do with the quality of software and the performance of the hardware.

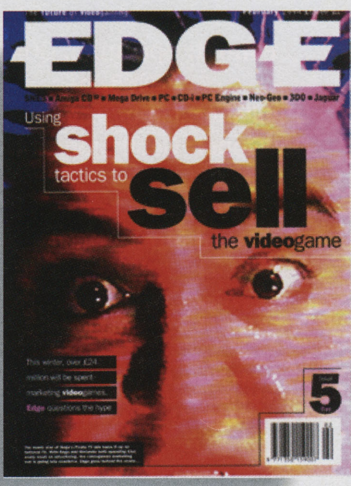
If software for these new system fails to represent any kind of leap, where's the incentive to upgrade? When the SFC arrived at the end of 1990, games like *Pilotwings* and *F-Zero* were not only technically outstanding but superbly playable too. 'Affordable 32bit games' may be available, but if they look and play no better than 16bit games, what's the point?











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Edge 1
How to get the best **sound** for your videogames. The birth of **3DO**. The making of ***Microcosm*** – the first CD shoot 'em up. **Reviews:** *SFII Turbo* (SNES); *SFII Championship Edition* (PC Engine); *Mortal Kombat* (SNES); *Gradius II* (PC Engine); *Silpheed* (Mega CD); *Inca* (CD-i); *Ecco* (Mega CD); *Lands Of Lore* (PC); *Sunset Riders* (SNES); *Viewpoint* (Neo-Geo); *Super Mario Collection* (SNES); *Gunstar Heroes* (MD); *Pinball Dreams* (PC); *Super Family Tennis* (SNES); *Zombies Ate My Neighbours* (SNES); *Rainbow Islands* (PC Engine); *Rocket Knight Adventures* (MD); *Yo! Joe!* (Amiga); *First Samurai* (SNES)

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Edge 2
Sex and **violence** in videogames – is it anything to worry about? The truth about **CD-ROM:** what is it and why do we need it? **Networking**: interactive TV and the global videogames link-up. **Reviews:** *Tatsujin 2* (Marty); *Thunderhawk* (Mega CD); *Jurassic Park* (SNES); *Street Fighter II: Special Championship Edition* (Mega CD); *Turrican 3* (Amiga); *Aladdin* (MD); *Top Gear 2* (SNES)

Edge 3
Supergun: the complete home arcade system. Game **genres**: why haven't videogames changed since the 1980s? **Virtual reality:** will it change videogames for good? **Reviews:** *Crash 'n' Burn* (3DO); *Super Empire Strikes Back* (SNES); *Dune* (Mega CD); *Return To Zork* (PC CD-ROM); *Splatterhouse* (Marty); *FIFA Soccer* (MD); *TFX* (PC); *Rastan Saga* (arcade)

Edge 4
PC Engine: the 8bit console that made a hit abroad but is still regarded as a cult in the UK. **Edge** talks to Peter Molyneux's Bullfrog, the company behind *Populous, Powermonger* and *Syndicate*, about their latest creations. **Reviews:** *Cybermorph* (Jaguar); *Secret Of Mana* (SNES); *Myst* (Macintosh CD-ROM); *Frontier: Elite II* (PC/Amiga); *Samurai Shodown* (Neo-Geo); *Dracula X* (PCE); *Aladdin* (SNES); *Joe Montana's NFL Football* (Mega CD); *Kether* (CD-i); *IndyCar* (PC)

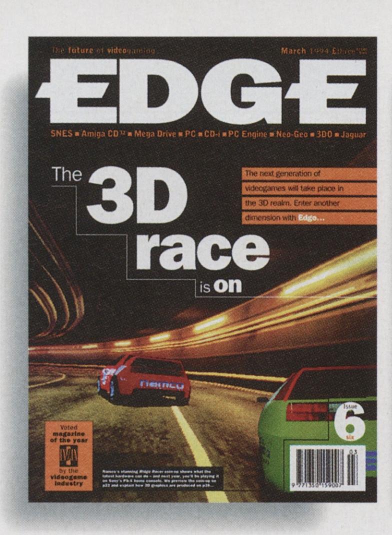
Edge 5
The hard **sell**: **Edge** looks at how videogames are marketed. Full PS-X tech specs. **Jaguar:** developers talk about the future of the world's first 64bit machine. **Reviews:** *Sam And Max* (PC); *Cannon Fodder* (Amiga); *Rebel Assault* (PC CD-ROM); *Crescent Galaxy* (Jaguar); *Mad Dog McCree* (3DO); *Stellar 7* (3DO); *Captive II: Liberation* (CD^{32}); *Actraiser 2* (SNES); *SubWar 2050* (PC)

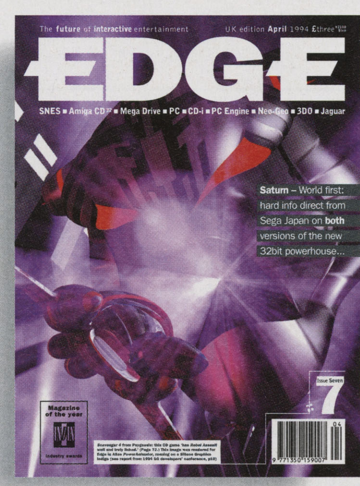
Edge 6
3D graphics: where they came from and how they're made. LAs VEgas CES report. **FMV:** the story of movies on CD. An Audience With **Archer McLean**, the man behind *Dropzone* and *Jimmy White's Whirlwind Snooker*. **Reviews:** *Total Eclipse* (3DO); *Raiden* (Jaguar); *Bomberman '94* (PC Engine); *Ganbare Goemon 2* (SNES); *Night Trap* (3DO); *Ground Zero Texas* (Mega CD); *Mortal Kombat 2* (arcade); *Fatal Fury Special* (Neo-Geo); *Voyeur* (CD-i); *Alone In The Dark 2* (PC)

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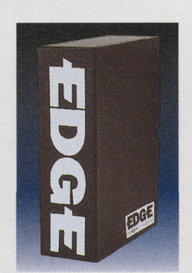


Edge 7
Edge asks: What's wrong with the **PC**? **LaserActive:** Mega Drive gameplay plus LaserDisc visuals. **Reviews:** *Doom* (PC); *Ridge Racer* (coin-op); *Super Darius 2* (PC Engine CD); *Super Puyo Puyo* (SNES); *Mega Man X* (SNES); *Scavenger 4* (Marty); *Lunar* (Mega CD); *SimCity 2000* (Macintosh/PC); *Monster Manor* (3DO); *Muscle Bomber* (Marty)

Edge 8
Inside **Namco**: **Edge** asks about *Ridge Racer*, PS-X and the greatest coin-ops of all time. The **CD³²**: is it doomed to fail? **Reviews:** *John Madden* (3DO); *Ultimate Tiger* (Marty); *Sub-Terrania* (MD); *Tempest 2000* (Jaguar); *Virtua Racing* (Mega Drive); *Spin Masters* (Neo-Geo); *Strider* (arcade)

Edge 9
Taos: a revolutionary new universal operating system. **Yu Suzuki:** Sega's driving force. Global **domination**: the multinationals muscling in on interactive entertainment. **Reviews:** *Ultima VIII* (PC); *Pebble Beach Golf* (3DO); *The Horde* (3DO); *Fatal Fury 2* (PCE); *Art Of Fighting 2* (Neo-Geo); *Super Metroid* (SNES); *The Sentinel* (Amiga/ST/C64/Spectrum)

Edge 10
Has the dream turned sour for **Trip Hawkins**? Out of **sync**: global incompatibility explored. **Reviews:** *SOS* (SNES); *Pacific Strike* (PC); *Super Wing Commander* (3DO); *Heavenly Symphony* (Mega CD); *7th Guest* (CD-i); *Windjammers* (Neo-Geo); *Flying Shark* (Marty)



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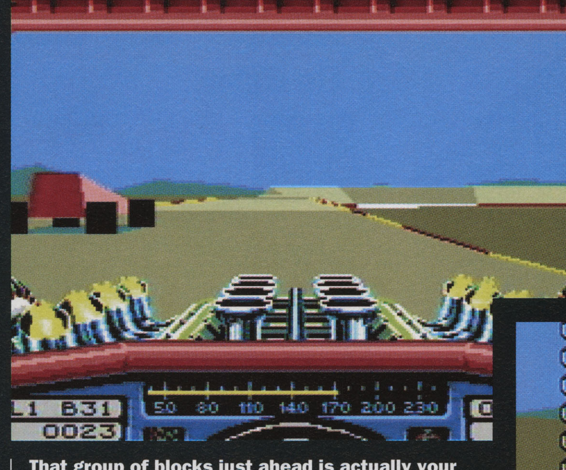
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Edge suffers from a severe bout of nostalgia as yet another title from the distant videogames past succeeds in putting current offerings to shame

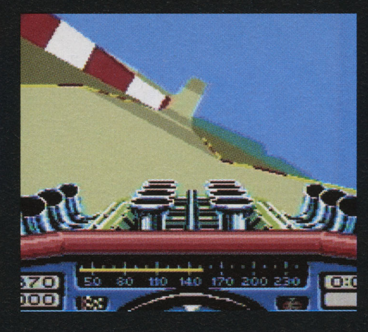
Stunt Car Racer

Format: Spectrum, C64, Amiga, ST
Publisher: Firebird
Developer: Geoff Crammond
Players: 1-2
Price: £8-£20
Released: April 1988

Edge invites quality contributions to Retroview (approx 250 words) – printed entries will be awarded a year's subscription to Edge. Address them to Retroview, Edge, 30 Monmouth Street, Bath BA1 2BW, or e-mail us via future@cix.compulink.co.uk, with a subject line 'ATTN: Jason Brookes'



That group of blocks just ahead is actually your opponent's car. Ignite your turbo and overtake it



Races often feel more like roller-coaster rides (top). Go off the track and you're winched back up (above). Take a hump too fast and your car's catapulted into the air (left)

Back in the late 1980s, when everyone was busy producing naff, flat-looking 'into the screen' *Pole Position* clones, programmer Geoff Crammond was busy putting the finishing touches to one of the most enjoyable 3D racing games ever conceived.

The idea behind *Stunt Car Racer* is simple: you have to drive your specially prepared stunt car around a series of tracks, competing against the other computer or human opponents to become champion stunt car racer. Simple.

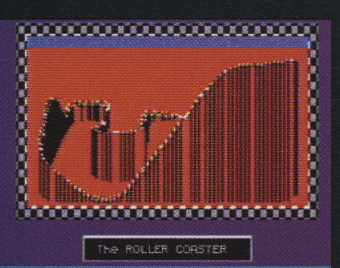
So why is it so enjoyable? Well, to start with, the tracks themselves are a little unusual, to say the least. They're just about wide enough for two cars to go down side by side, they're constructed from polygons (the sole preserve of flight sims back then), and many of them wouldn't look out of place in a fairground boasting the world's biggest and scariest rollercoaster.

The only thing that keeps your car on these narrow, undulating tracks is skill. There are no barriers to stop you from plunging off to your doom, no banking to slide around, nothing; just a track with a sheer drop on either side. And in most cases this drop is considerable. Luckily, your car is incredibly resilient. It's not indestructible, though – cracks appear around the windscreen to indicate how much damage you've sustained and how much more you can afford to take.

Unlike many of its contemporaries, *Stunt Car Racer* doesn't allow you to see your car onscreen – you're always stuck behind the windscreen. But this doesn't detract from the gameplay in the slightest; in fact, it enhances that all-important feeling of 'being there'. And that kind of immediacy is only just beginning to be incorporated into modern-day racers.

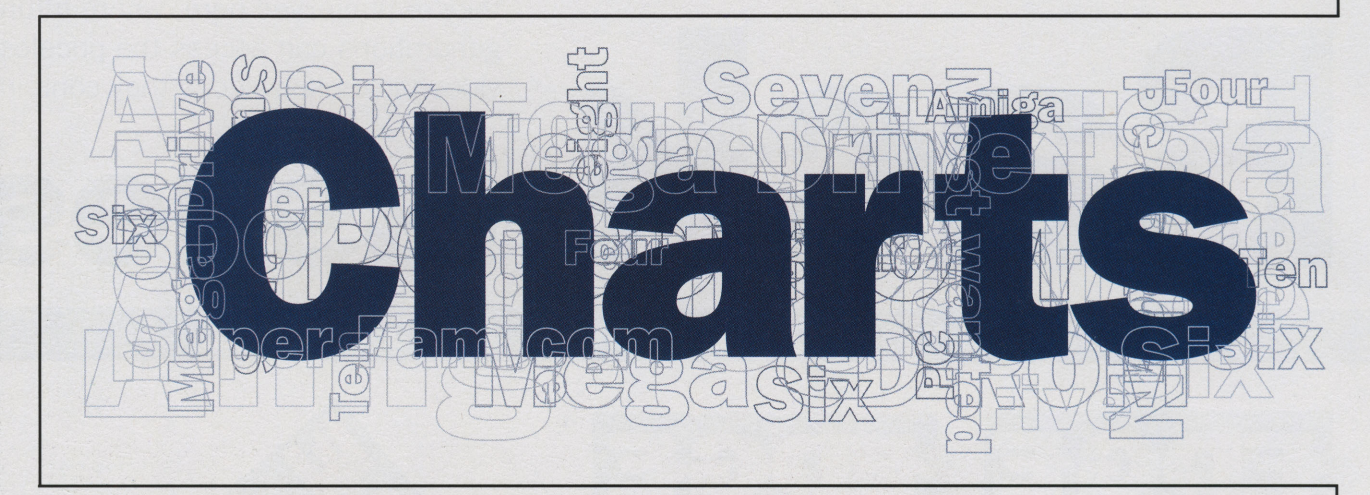
Stunt Car Racer bears out that predictable old whinge, 'they don't make 'em like they used to'. In fact, it's surprising that no-one has bothered converting it for 16bit consoles; with today's in-cart technology, SNES and Mega Drive owners could have enjoyed one of the greatest racing games ever.





No-one thought it could be done, but the C64 version of *SCR* managed to retain all the thrills and spills of the Amiga original – and it looked pretty smart, too

Sam And Max PC CD-ROM **Sim City 2000** PC **Gunship 2000** CD32 **Daytona** Arcade
Ground Zero Texas Mega CD **FIFA International Soccer** MD **Rock 'n' Roll Racing** SNES



The very latest **charts** from across the entire world of videogaming

Mega Drive

1 **FIFA International Soccer** ***Electronic Arts (£45)***
2 Sonic The Hedgehog 3 *Sega (£60)*
3 PGA European Tour *Electronic Arts (£40)*
4 NBA Jam *Arena Entertainment (£50)*
5 Sensible Soccer *Renegade/Sony (£40)*
6 Aladdin *Sega (£50)*
7 Micro Machines *Code Masters (£35)*
8 Zool/James Pond 3 *Telstar Fun & Games (£45)*
9 Jungle Strike *Electronic Arts (£45)*
10 Sub-Terrania *Sega (£45)*

SNES

1 **Rock 'n' Roll Racing** ***Ocean (£50)***
2 Clayfighters *Ocean (£45)*
3 NBA Jam *Acclaim (£60)*
4 Sensible Soccer *Renegade/Sony (£45)*
5 Sim City *Nintendo (£40)*
6 Starwing *Nintendo (£50)*
7 Super Mario Kart *Nintendo (£40)*
8 Kevin Keegan's Player Manager *Imagineer (£48)*
9 Aladdin *Capcom (£50)*
10 The Empire Strikes Back *JVC (£60)*

PC

1 **Sim City 2000** ***Maxis/Mindscape (£40)***
2 Cannon Fodder *Virgin (£35)*
3 Premier Manager 2 *Gremlin Graphics (£35)*
4 F14 Fleet Defender *Microprose (£45)*
5 Frontier: Elite 2 *Gametek (£40)*
6 Pacific Strike *Electronic Arts (£50)*
7 Ultima VIII *EA (£50)*
8 Microsoft Flight Simulator V5 *Microsoft (£40)*
9 UFO: Enemy Unknown *Microprose (£45)*
10 Battle Isle 2 *Blue Byte (£40)*

US: all formats

1 **Super Metroid** ***Nintendo (SNES)***
2 NBA Jam *Acclaim (Genesis)*
3 World Series Baseball *Sega (Genesis)*
4 Ken Griffey Jr Baseball *Nintendo (SNES)*
5 NBA Showdown *Electronic Arts (Genesis)*
6 Tiny Toons *Konami (SNES)*
7 Batman Returns *Konami (SNES)*
8 FIFA Soccer *Electronic Arts (Genesis)*
9 Mortal Kombat *Acclaim (Genesis)*
10 Total Carnage *THQ (SNES)*

Amiga CD32

1 **Gunship 2000** ***Microprose (£30)***
2 Frontier: Elite 2 *Gametek (£40)*
3 The Chaos Engine *Renegade/Mindscape (£30)*
4 Liberation *Mindscape (£35)*
5 Sensible Soccer 92/93 *Renegade/Mindscape (£25)*
6 Striker *Gremlin Graphics (£30)*
7 Pirates' Gold *Microprose (£30)*
8 Zool 2 *Gremlin Graphics (£30)*
9 Brutal Football *Millennium (£30)*
10 Ryder Cup Golf *Ocean (£30)*

Mega CD

1 **Ground Zero Texas** ***Sony Imagesoft (£50)***
2 Sonic CD *Sega (£45)*
3 Night Trap *Sega (£50)*
4 WWF Rage In The Cage *Arena Entertainment (£50)*
5 Lethal Enforcers *Konami (£55)*
6 Thunderhawk *Core Design (£45)*
7 Silpheed *Sega (£50)*
8 Road Avenger *Sega (£40)*
9 Ecco *Sega (£45)*
10 Microcosm *Sony/Psygnosis (£50)*

PC CD-ROM

1 **Sam and Max Hit The Road** ***US Gold (£46)***
2 7th Guest/Dune *Telstar Fun & Games (£50)*
3 Mega Race *Mindscape (£40)*
4 Rebel Assault *US Gold (£46)*
5 Day Of The Tentacle *US Gold (£46)*
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8 Jack Nicklaus CD Compendium *Accolade (£20)*
9 UFO: Enemy Unknown *Microprose (£45)*
10 Battle Isle 2 *Blue Byte (£50)*

Arcade: dedicated

1 **Daytona GP** ***Sega***
2 Ridge Racer *Namco*
3 Suzuka 8 Hours II *Namco*
4 Lethal Enforcers II *Konami*
5 Out Runners *Sega*



After only three weeks on location, *Daytona GP* races into the number one position

Arcade: PCBs

1 **Super Street Fighter II Turbo**
Capcom

2 Raiden II
Seibu

3 World Cup '94
Tecmo

4 Super Sidekicks II
SNK

5 Ultimate Tennis
Nova

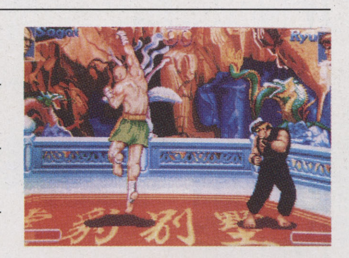
6 Twin Eagle II
Seta

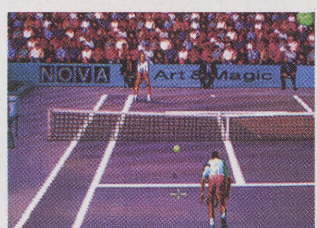
7 Denjinmakai
Banpresto

8 Grand Striker
Human Co

9 Super Cup Finals
Taito

10 Gun Lock
Taito







Will Capcom's beat 'em up (top) ever be knocked out? *Ultimate Tennis* (middle) is trying hard at number five, and *Twin Eagle II* begins its assault at number six

Japan: all formats

1 **J League: Excite Stage '94**
Epoch (SFC)

2 Final Fantasy VI
Square Soft (SFC)

3 Super Bomberman 2
Hudson Soft (SFC)

4 Heavenly Symphony
Sega (Mega CD)

5 Derby Stallion 2
Ascii (SFC)

6 F1 Grand Prix Part III
Video System (SFC)

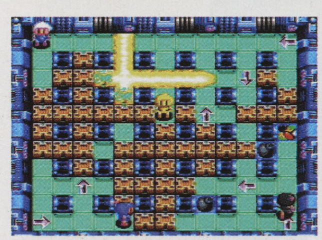
7 Cal III
NEC Avenue (PCE CD)

8 Super Puyo Puyo
Banpresto (SFC)

9 Super Metroid
Nintendo (SFC)

10 Virtua Racing
Sega (Mega Drive)







Japan's gone football crazy, with *Excite Stage '94* (top) managing to beat even the mighty *FFVI* into second place. *Super Bomberman 2* (middle) explodes at number three, while *Heavenly Symphony* comes in at number four

Edge readers' most wanted

Which item of videogames hardware or software – real or vaporous – would you most like to get your hands on? Write and tell Edge your greatest desires at: Edge Most Wanted, Edge, Future Publishing, 30 Monmouth Street, Bath, Avon BA1 2BW.

1 **Labyrinth *(PlayStation)***



Leaping from number four to number one, *Labyrinth* (previously called *Legend*), for Sony's PlayStation, becomes this month's most anticipated title. Is this the beginning of PlayStation-mania?

2. Daytona *(Saturn)*



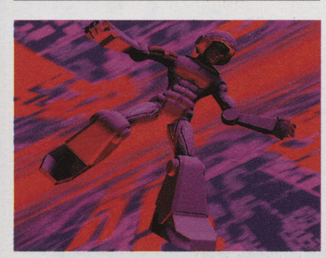
Sega's brilliant texture-mapped racing game just holds onto second place this month

3. Virtua Fighters *(Saturn)*



***Virtua Fighters* is the first Saturn game announced – and also the most eagerly awaited one**

4. Inferno *(PC CD-ROM)*



***Inferno* is sending many of you into a frenzy of expectation. Let's hope it's finished soon...**

5. Ridge Racer *(Sony PlayStation)*



Amazingly, *Ridge Racer* has never been out of your top five. Just hang on until Christmas...

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Martin Kenwright, **MD Digital Image Design**

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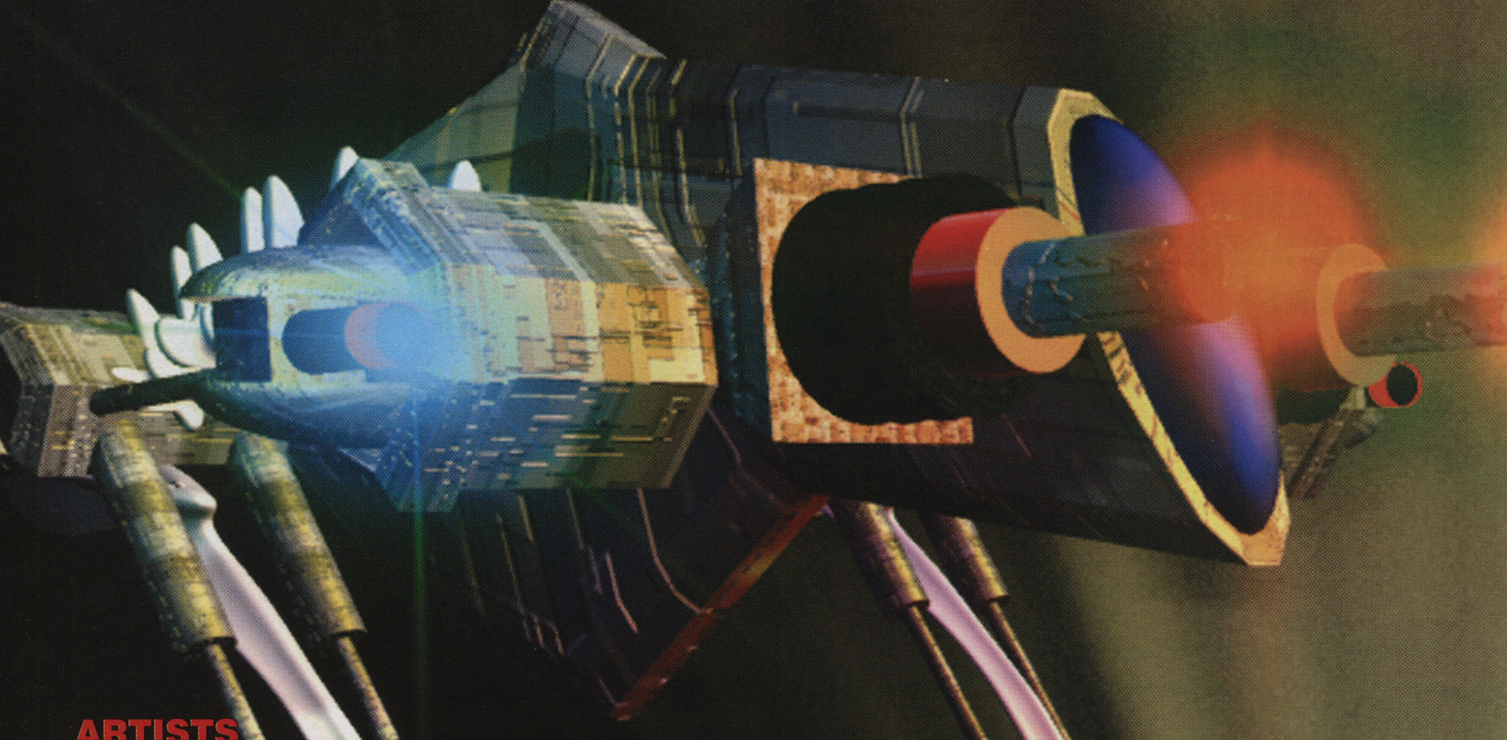
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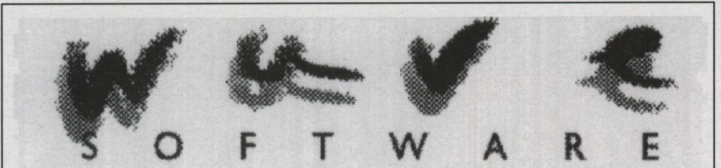
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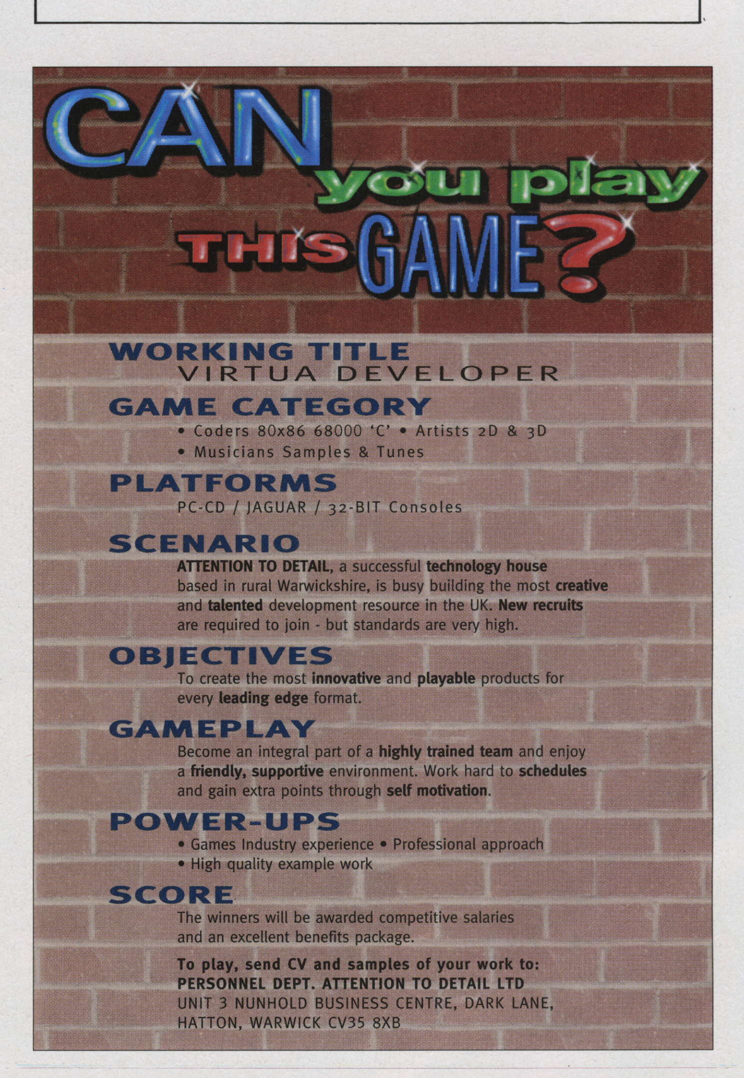
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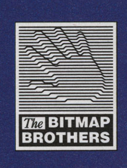
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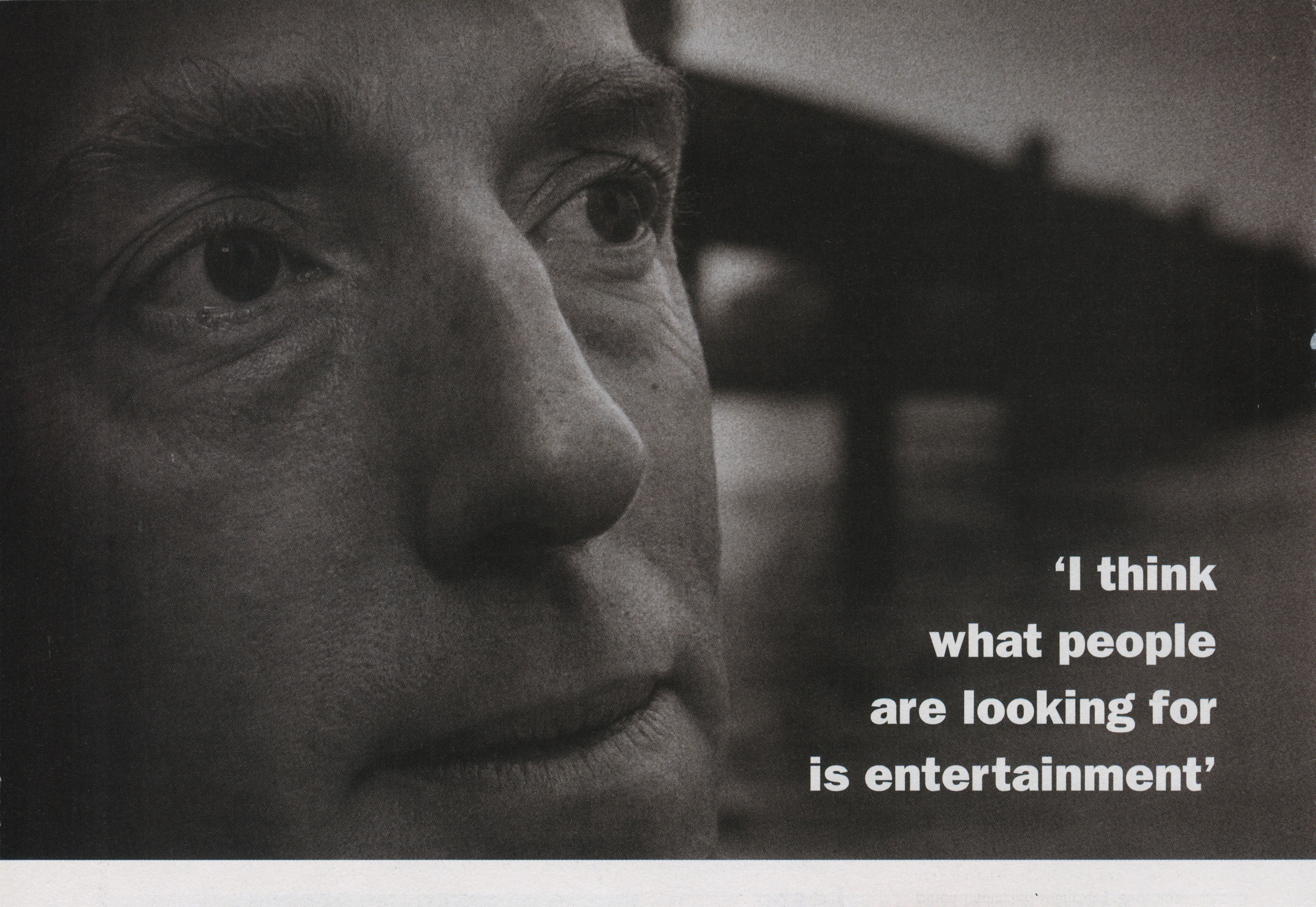
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The BITMAP BROTHERS



An audience with Nick Alexander

Founder of Virgin Games, ex-chief of Sega Europe... Nick Alexander is a man who knows what he's talking about. **Edge** listens

Anyone who's been involved to any extent with games during the last few years, whether as a player or as a producer, will at some time have felt the influence of Nick Alexander. As the founder of Virgin Games, and then the MD of Sega Europe, he has, in his own way, shaped the videogames industry.

Before he got into videogames, Nick worked for EMI, analysing market trends in the record business. This put him in a good position to look into the future of consoles in the UK for Sega. And over the last few years, where Sega have gone, others have followed. But last Christmas, following a long period of growth, Sega took a beating. After fighting the resulting fires, Nick decided it was time for a change, and moved into the video and magazines business as the MD of Pearson New Entertainment Europe. This has allowed

him to take a breather from the videogames industry and the intense glare of publicity associated with it.

Nick is young for a managing director – he's not yet 40 – and must be one of the few executives who still reads the NME or has any kind of grip on popular culture. He lives in London, in a pleasant house by the Thames (his house, incidentally, used to be the headquarters of EMS, the company responsible for the first UK-built music synthesiser). He owns a Mega Drive and a Mega CD, obviously, and although he's between laptops at the moment (his last one had to be returned to Sega and he's still waiting for a new one), he is currently in the market for a multimedia PC.

Edge How did you get into this business?

Nick Alexander When I left university I went to be a graduate trainee at British Rail. I realised really rapidly that I'd made a mistake. I was sent off to an induction course, and we were lectured to about various different aspects of British Rail. Come lunchtime we'd all talk about trains and what we'd learned. On Friday lunchtime, having had to talk about trains all week long, I thought perhaps I could start to talk about something else, and I started a conversation about this very mainstream band I'd been reading about in NME. Silence fell across this table of people and the guy sitting opposite me said, with eyes like saucers: 'I've always wanted to meet someone who read the NME'. Then they went back to talking about trains, and I realised that perhaps this was not quite my view of the world. I decided that BR was not for me. I wrote to all the record companies and they all wrote back and said, 'We don't employ people outside the record industry'. Eventually I got a job at EMI as a business planner, which was as near as I could get. Six months after that I got a job in the record company, again as a business planner. So within a year I was working for EMI Records. Eventually I got a job as a label manager, which was what I wanted to do. I went from there to HMV Shops to be their marketing manager. My job there was trying to help them take business away from Virgin. In fact, we were very successful. Unsurprisingly, I got a call from Virgin asking me if I wanted to go and work for Virgin Retail.



'I think that simple machines for entertainment – let's call them consoles – are absolutely the way forward'

Edge So how did you end up working for Virgin Games?

Nick I didn't want to do the job they offered me. I got a call from Richard Branson, because the managing director of Virgin Retail had left and he wanted to talk to me about that. I went to see him on his boat, and he offered me the job, and I said, 'Actually, I don't want to do that. I've been thinking about setting up a computer game company'. So he said, 'All right, we'll do that then'. So I started Virgin Games, which was in about 1983.

Edge Which of course led to Virgin Mastertronic and then Sega Europe. Have you ever been into games personally? Ever been into coding?

'I actually think that Mars is the best-positioned games machine, because it enables people to get into 32bit without having to shell out all the money'

Nick Actually, when I was at school there was a computer option, which I did. I tried to write a program which simulated the operation of the Metropolitan and District Railway, which I was very interested in. It was sort of at the end of my time at university that *Pong* came in, like 1975, and after that I used to spend a lot of time in a pub where there was one of those early driving games. One of the things I'm hoping to do is to find some time to play some of the games I like – more train games, I'm afraid, like *A Train* or *Railroad Tycoon* [laughs]. Okay, I liked trains, but I just wasn't as obsessed as the rest of them!

Edge Which of the upcoming games machines do you think is the best?

Nick I actually think that Mars is the best-positioned games machine, because it enables people to get into 32bit without having to shell out all the money. The great problem is that everybody is aware that 32bit is just around the corner, and they're all a bit bored with 16bit. But what's happened in the last ten years is that we're making flashier versions of the same games that actually probably worked better on the Atari 2600 or the Sinclair Spectrum. There are very few game genres that have



Photographs: **Jude Edgington**

'What's happened in the last ten years is that we're making flashier versions of the same games that actually probably worked better on the Atari 2600 or the Sinclair Spectrum'

Continued next page

interview

been developed. Games like *Sim City* and *Tetris* were a real breakthrough, but you can certainly count them on the fingers of two hands. If anything, it's the creative input that is lacking in many ways – technological improvement and the ability to take the business forward has become a surrogate for creative thought. I don't know what the solutions to that are. Anyway, when the 32bit machines come out they're going to be £400, and that's not going to be a mass market. What Mars manages to do is let you buy for £150 something that gets your existing equipment up to 32bit. I think the tech spec of the Sony machine sounds very interesting, but I don't think there's much to choose between that and the Saturn. I don't think one should dismiss 3DO, and who knows what Nintendo will eventually come up with?





It's going to be very competitive and I think that's going to hold things back a bit. People don't want to choose the wrong bit of hardware, and if there's one thing the consumer electronics industry has taught consumers, it is that if you wait till next year it'll be better, it'll be cheaper, and maybe it'll be easier to make a choice. I think it's going to be a bloody battle out there. I think we're a long way off a global standard – if anything, I think we're moving in the opposite direction.

Edge What do you think of the state of game design?

Nick I think it's looking for direction. I think for game design to move forward it needs input from other creative areas, and multimedia. What most people have been doing so far is seeing multimedia as something they can build a bigger game on, and they're thinking about interactive entertainment as being games. At the Computer Arena in March this year, something that struck me then was that everyone was saying, 'Well, we're in the games business'. We never used to talk about ourselves being in the games business; I think we're actually in a much broader industry than that. But we've got locked into games design as being about games, and games work like 'this'. Now I'm getting into the video and consumer magazine publishing business, and I think that the influences and products that come from those areas, and incorporate some of the games stuff as well, will be the interesting thing which helps games take a step forward. This is what I'm going to do now with Pearson. I'm not intending to be involved in games in the immediate future, I'm stepping back from that and trying to acquire some knowledge and assets and property in those other areas, which can then be blended in as and when there's a hardware base.

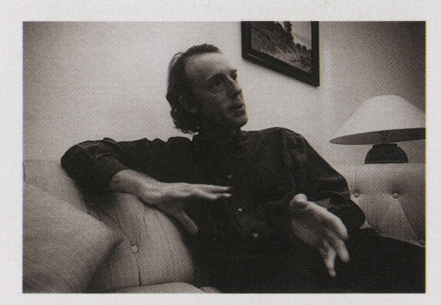
Edge Do you think consumers are too spec-hungry?

Nick One of my chief bugbears in all of this is that, actually, all businesses aren't about technology; they're about markets and about what things to deliver to the consumer. I think the consumer gets frightened that they're getting behind in the technology, and clearly, if you're a high-tech company that's what you're trying to get across: you need us because we're the best. But very quickly, as soon as something new comes out, you're not the latest and the best, so one needs to find better values than that to really build the market. I think what people are looking for is entertainment, and the machines that deliver the best entertainment are going to be the most satisfying. But that doesn't mean that people aren't going to be tempted to try the new technology.

Edge Do you think consoles have got a future as set-top boxes?

Nick Absolutely. Some people believe in 'The Black Box' – that there will be a device which will control the entertainment that comes into the home, and all the manufacturers are gearing up for the big battle. I think that's completely misguided, and the world isn't going to be like that. I suspect that what we'll end up with is a domestic network with some kind of protocol to enable different things to communicate with one another, and that there will be endless devices in the home. Maybe there'll be a PC, the cable box, maybe a specialist games machine, video recorder, whatever. As a result there isn't a single war to be won. I think that simple machines for entertainment – let's call them consoles – are absolutely the way forward. EDGE

'If there's one thing the consumer electronics industry has taught consumers, it is that if you wait till next year, it'll be better, it'll be cheaper, and it'll be easier to make a choice'





Nick Alexander, self-confessed train freak, was all set for a BR career but soon decided he was on the wrong track

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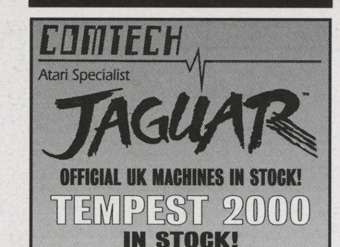
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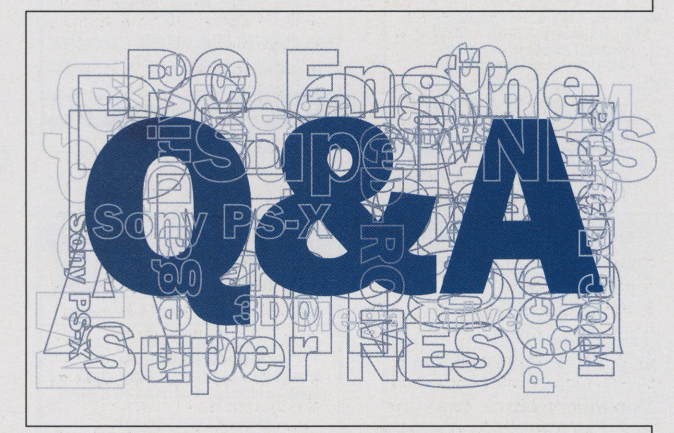
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questiontime

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Questions, queries, doubts, disputes... Only Edge has all the answers

Q **1.** When is the official roll-out of the Jaguar?
2. What is the proposed price of the Jag CD-ROM drive?
3. Have Konami or Capcom shown any interest in the Jaguar?
4. What games have Maxis (*Sim City 2000*, perhaps?) and LucasArts got lined up for Jaguar?
5. Is there any more news on Jaguar versions of *Syndicate* and *Theme Park*?

Nick Dorey, Dorset

A **1.** At the moment, Jaguars are dribbling into the country through distributors SDL and ZCL, and Rumbelows are supposed to be talking on the machine. However, there is so much uncertainty surrounding Atari and its console that no-one in their right mind would speculate on its availability just yet. Also, don't be surprised if the price escalates to £249 for a while.
2. No news yet, but expect something around £200.
3. Japanese big guns like Konami and Capcom are unlikely to sign up for Atari's machine because there is no planned Japanese launch and the Atari name carries virtually no weight in Japan. Besides, in an attempt to take on Sega and Nintendo, Atari have taken a deliberate anti-Japanese stance in their marketing of the Jaguar in the States. Something along the lines of 'the Japanese can't make decent games... buy American'. See the problem?
4. Nothing's been announced.
5. Bullfrog are handling the conversions. They should be out towards the end of the year.

Q **1.** When will the UK 3DO (PAL version) be available, and how much, approximately, will it cost?
2. When will the Sanyo and AT&T models be available? Will there be any difference to the Panasonic 3DO and how much, approximately, will they cost?
3. Will software be compatible between each model?
4. With regard to the 3DO card for the PC, is there a possibility of PC CD-ROM software being converted onto the 3DO?
5. Are the rumours of an even more powerful 3DO due to appear in 1995 true? If so, would it be more expensive and would it be worth waiting until then to part with my cash?

Darren Silk, Barking

A **1.** Around September, and probably over £400.
2. Sanyo's machine will go on sale in Japan in the summer, and will possibly hit the UK in the autumn, while AT&T's machine has been put on hold for the time being.
3. Yes; that's the whole point of the 3DO.
4. Of course, and games like *Alone In The Dark* are already on their way.
5. Trip said as much in **Edge** 10, but, as he also said, you could wait for ever for more powerful hardware to arrive.



Sanyo's version of the 3DO is on its way and could join Panasonic's box in UK shops by autumn this year (see letter from Darren Silk)

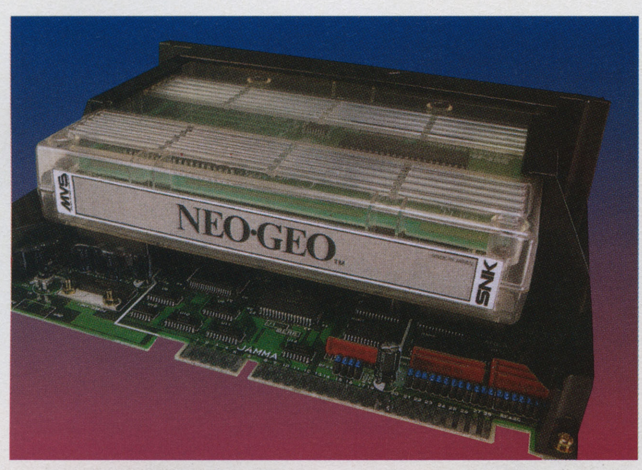
Q **1.** What on Earth are floating-point operations per second (FLOPS)?
2. Will Saturn, at its present specs, be able to faithfully reproduce *Daytona*?
3. Which do you think will get the best conversion, *Daytona* to the Saturn or *Ridge Racer* to the Sony PlayStation?
4. And finally, to put you on the spot, which of the new 'super-consoles' would you buy?

Ben Jones, Bristol

A **1.** FLOPS are a measure of the number of mathematical calculations a computer can perform every second. In terms of games, they're a useful benchmark for a machine's realtime 3D graphics performance.
2. No. Sega have hinted that Saturn's specs are not capable of matching the performance of the Model 2 arcade board. Sega, like Nintendo, use lots of 'off the shelf' chips in their hardware, and this places a financial restriction on the number of chips they can cram into their home platform. Basically, don't expect miracles.
3. Based on current specs, the PlayStation has a better chance of replicating *Ridge Racer* than the Saturn has of duplicating *Daytona*. Both arcade machines feature similar polygon rendering performance, but Sony's machine *is* more powerful than Sega's, according to Saturn's current – and apparently final – specs. However, it's possible that Sega's *Daytona* programmers will be more familiar with Saturn's hardware than Namco will be with the PlayStation, and it's debatable whether Namco, or anyone else, for that matter, will be able to exploit the true potential of Sony's machine in time for the launch. Incidentally, let's hope that Namco spruce up the gameplay in *Ridge Racer* for the home version – travelling solo round a single track just won't cut it.
4. **Edge** has high hopes for all future hardware, but software will remain the key criterion when choosing a games machine. Nintendo's 64- and 32bit systems will undoubtedly shine with the help of some great titles (when they finally appear), but more immediate attention must be given to Sony and Sega, who seem to be doing their utmost to line up killer software for their respective Japanese launches. Let see what happens, eh?

Q **1.** Can a UK Neo-Geo play US and Japanese carts without the need for any adaptors and without any difference in speed?
2. Are home Neo-Geo systems compatible with Neo-Geo arcade carts, or am I right in thinking that there is a size difference?
3. Are Neo-Geo PCBs completely different to Neo-Geo cartridges?

Alan Partridge, Norwich



The Neo Geo MV-FZ1 is a single-slot JAMMA-standard PCB that plays Neo Geo MVS arcade cartridges (see letter from Alan Partridge)

A 1. Yes and no. There's no such thing as an adaptor for a Neo-Geo simply because there isn't any need – games work irrespective of the machine they're running on. However, there are some differences in the games themselves (*Samurai Shodown*'s lack of blood on the UK and US machines being the most recent and controversial) and there is an inevitable speed reduction on 50Hz PAL Neo-Geos.
2. Neo-Geo arcade carts tend to be made available earlier than their home-market counterparts, and definitely do not work on the Neo-Geo home console.
3. The Neo-Geo arcade system uses cartridge software, not PCBs. However, the actual system hardware comes in a similar form to a traditional PCB.

Q 1. I'm thinking about buying a Jaguar, but what's all this talk about a Jaguar 2 in 1995? I don't want to invest in a machine that's going to be abandoned by its own manufacturer within a year.
2. If I buy a US SCART Jaguar from an importer, could I then buy the CD drive directly from the USA and connect it to my Jag without any modification?
3. Now we've seen *Tempest 2000* (and *Battlezone 2000* is on its way), could we see Jaguar conversions of other Atari coin-ops, like *Centipede* and *Asteroids*? A compilation cart, perhaps?
4. Why is an **Edge** subscription for other countries so expensive? £63 for Europe is a bit steep.

Tommi Lupunen, Finland



Do you need an MPEG cart to play *Road Rash* on the 3DO? (See letter from Philip Boyce)

A 1. Jaguar 2 was something that ATD talked about in **Edge** 5. It is simply Atari's plan to safeguard their future place in the market – hardware takes years to develop, so work doesn't stop as soon as one system is complete. Don't expect to see anything on Jaguar 2 for a few years, though (unless Jaguar 1 hits problems, that is).
2. Yes, of course. Unless Atari's CD drive plugs into pin-outs…
3. *Star Raiders* and *Battlezone* are the only confirmed oldies to get the Jaguar treatment, but retro gaming definitely seems to be in (in fact, there's probably a feature there. Watch this space).
4. A couple of pounds on top of the magazine's normal UK retail price isn't excessive – postage overseas isn't cheap, you know. And it's worth it – what other magazine keeps you as well informed as **Edge**?

Q I will be buying a Panasonic 3DO a few months after it is launched here in Britain, and I was wondering if you could answer these few questions about the system.
1. What kind of operating system does the 3DO have?
2. In past issues you have previewed both *Road Rash* and *Shockwave* and have stated that they both use MPEG. Will I then have to wait until I buy the MPEG cartridge before I am able to play these games, or will they run on Cinepak with the choice of an MPEG upgrade, as Bob Faber suggested in **Edge** 8.
3. A special episode of the TV programme Equinox some time ago covered the ever-growing videogames market and showed *John Madden* on the 3DO running in fourplayer mode. But in issue 8 you said that it was only a game for up to two players, and Bob Faber also said that the Panasonic machine is at the moment only capable of handling up to two players. So how did Equinox manage to get four people playing at once?
4. Will the Jaws film be released on MPEG?
5. Do Future Publishing have any plans for a magazine dedicated to the 3DO?

Philip Boyce, County Antrim

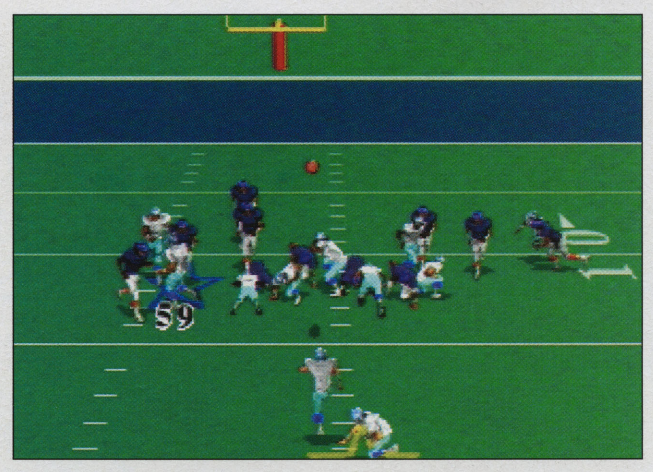


Syndicate for the Jaguar? (See letter from Nick Dorey)

A 1. 3DO has its own dedicated operating system which is loaded in from disc every time you use the machine.
2. We did not state that they use MPEG! Both games will run on a standard 3DO without the need for an MPEG cartridge.
3. If you looked closely, you would have noticed that the four players in question were actually using Mega Drive joypads, and yet close-ups of the screen revealed that they were playing the 3DO version of the game. That's the beauty of television.
4. Your guess is as good as ours.
5. So far, the projected sales of the system do not make a 3DO-specific magazine a viable proposition. If 3DO ever becomes the standard it is intended to be, Future will no doubt produce a magazine to support its users. In the meantime, it's not unreasonable to expect that we might do a one-off special to cater for first-time buyers.

Q and A

You can rely on Edge to cut through the technobabble and give you straight answers. Write to: Q&A, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW, You can fax us on 0225 338236, or e-mail us via future@cix.compulink.co.uk. with a subject line 'ATTN: Jason Brookes'. Sorry, but we cannot answer any questions personally, either by post or over the phone.



3DO *John Madden Football*, as seen on Channel 4's Equinox: is it a twoplayer or a fourplayer game? (See letter from Philip Boyce)

Next month

CES

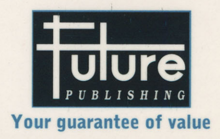


The Consumer Electronics Show is the biggest electronic games event in the western hemisphere. This summer's show in Chicago will be dominated by Nintendo, who will finally be unveiling Project Reality hardware and their first 64bit title – *Killer Instinct*. Edge has privileged access to Nintendo's Project Reality suite and will also be bringing you details of what's already being hailed as 'Nintendo's best 16bit software line-up ever'. Check out Edge 12 for an extensive report.

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